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ROANOKE RIVER BASIN

POLLUTION SURVEY REPORT

STATE STREAM SANITATION COMMITTEE
NORTH CAROLINA STATE BOARD OF HEALTH
1956

POLLUTION SURVEY
REPORT NO. 4

THE ROANOKE RIVER BASIN

A study of existing pollution in the Roanoke River Basin together with recommended classifications of its waters.

STATE STREAM SANITATION COMMITTEE

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NORTH CAROLINA STATE BOARD OF HEALTH
RALEIGH , NORTH CAROLINA

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INTRODUCTION

The survey of the surface waters in the Roanoke River Basin was undertaken, and this report has been prepared to fulfill the requirements of Section 143-215 of Article 21 of the General Statutes of North Carolina. The area considered during these studies and covered by this report is the entire watershed of the Roanoke River lying within North Carolina, as shown on accompanying maps entitled "Roanoke River Basin, Geographic Locations of Sampling Stations," pages 11 and 13. The Roanoke River is an interstate stream draining a large area in Virginia through the Roanoke River and a relatively smaller area drained by the Dan River and its tributaries.

The data on which this report is based have been developed through actual laboratory studies of existing stream conditions, engineering surveys of municipal and industrial plant water supplies and treatment facilities, from information obtained from existing files and from conferences with persons well acquainted with the area.

The laboratory studies started during August, 1953, and continued at intervals until October, 1955. The objective of the 1953 study was to establish the general water quality pattern of the river during the critical period of high water temperatures. Supplemental studies were undertaken during the spring of 1954 primarily to determine river conditions in respect to dissolved oxygen and toxicity during the time that anadromous fishes were present in the river. As a result of changes in river conditions produced by the construction of a hydroelectric plant and by certain plant changes made by the Halifax Paper Company, Inc., additional studies were undertaken during both the spring and the fall of 1955, and the summer of 1956.

Data with reference to stream flows, watershed areas, and stream mileages were furnished by the North Carolina District Office, Geological Survey of the United States Department of Interior, under the terms of a cooperative agreement between that office and the State Stream Sanitation Committee. Other state agencies have also been of considerable assistance in furnishing data with regard to land and stream usage.

This report presents information about present stream conditions, usage of water resources in the basin, sources of pollution entering these water resources, pollution prevention measures now in effect, and proposed classifications for the waters of the basin.

Throughout the conduct of these studies and the preparation of this report, a sincere effort has been made to present a fair picture of the complex water pollution problems within the basin. Likewise, every effort has been made toward developing reasonable conclusions and recommendations pertaining to the proposed classifications of the various waters comprising the water resources of the area. It is hoped, therefore, that the report will be useful to all who are concerned with the problem of safeguarding the water resources in the Roanoke River Basin.

ACKNOWLEDGMENT

The State Stream Sanitation Committee gratefully acknowledges the valuable cooperation and assistance of those agencies and individuals which have contributed to the Roanoke River Basin studies and the preparation of this report.

Special recognition is given to the officials of industries and municipalities throughout the basin who furnished data relative to plant operation, waste discharges and treatment facilities employed. Special recognition is also given the Division of Water Pollution Control, United States Public Health Service for its valuable assistance in all of the Roanoke River studies. Recognition is also given the Halifax Paper Company and the North Carolina Pulp Company for their valuable assistance and cooperation. Recognition is also given the Town of Roanoke Rapids, the North Carolina Wildlife Resources Commission, and the North Carolina Pulp Company for furnishing space and utility services for laboratory units located at these points during the period of the survey.

Federal and state agencies from which cooperation and assistance were obtained include the Geological Survey of the United States Department of Interior; the Division of Water Pollution Control, United States Public Health Service; the North Carolina Department of Conservation and Development; the North Carolina Wildlife Resources Commission; and the State Board of Health. Assistance was also rendered in numerous instances by County Health Departments, County Departments of Agriculture and other agencies and individuals interested in preserving and developing our water resources. This assistance is hereby acknowledged.

SUMMARY

This report has been prepared to fulfill the requirements of Section 143-215 of Article 21 of the General Statutes of North Carolina.

The area covered by this report is the entire watershed of the Roanoke River in North Carolina encompassing approximately 3,520 square miles. The estimated 1950 population of the basin was 283,670.

Water uses in the basin include domestic and industrial water supplies; electric power production; bathing and other forms of recreation; fish and wildlife propagation; agriculture, including livestock watering and irrigation; and waste disposal.

There are 21 public water supplies within the basin serving approximately 55,200 people which use some 6.25 million gallons of water per day. There is no complete record of the quantity of water used for industrial purposes. Some industrial establishments depend on municipal water supplies; however, most industries that require large quantities of water maintain private water supplies.

There are 12 public ground water supplies in the basin serving an estimated population of 16,850 which use about 1.25 million gallons of water per day.

There are nine public surface water supplies in the basin serving an estimated population of 38,350 which use approximately 5.0 million gallons of water per day.

There are 42 points of significant pollution within the basin. These wastes consist of domestic sewage, industrial wastes or combinations of both.

CONCLUSIONS

From a review of the data in this report, it is concluded that:

1. The waters of the basin are not presently used to their utmost. There is an adequate quantity of water to sustain additional industrial expansion, population growth, recreational development and other legitimate uses provided a comprehensive water pollution control program is carried out.

2. Both population and industrial development are increasing in the basin. These trends are toward greater water use. To adequately protect the water resources of the basin for future use, steps must be taken to reduce existing pollution and to insure that future polluters provide effective waste treatment.

3. Industry has not kept pace with municipalities in the abatement of pollution. Of the wastes being discharged to the streams without any treatment, there are 11 points discharging domestic sewage with a population equivalent of 48,480 while there are 21 points discharging industrial wastes without treatment with a P.E. of 703,800.

4. Unsatisfactory operation and lack of proper maintenance have reduced the efficiency of many existing waste treatment plants.

5. The classification of the Dan River below the Leaksville water supply intake should be established as C for the protection of the Danville, Virginia, water supply.

6. Municipalities and industries should obtain qualified personnel to study their own waste disposal problems, and to seek proper waste treatment methods and facilities.

7. The recommended classifications as shown in Table 7 beginning on page 157 are based on the best usage now being made of the waters or contemplated in the foreseeable future and, therefore, should be adopted.

VIRGINIA
STOKES
MAYO
SMITH RIVER
DAN RIVER
VIRGINIA
Danville
Clarksville
Spray
Draper
Leaksville
Stoneville
Moyodon
Madison
Danbury
ROCKINGHAM
Reidsville
CASWELL
Yanceyville
HYCO
PERSON
GRANVILLE
Roxboro
Longhurst
FORSYTH
Walnut Cove
Cascade Cr.
Coal Bank Cr.
Meadow Br.
Big Pine Cr.
Little Cr.
Double Cr.
Buffalo Cr.
Hickory Cr.
Pine Hall Br.
Mountain Br.
Little Snow Cr.
Snow Camp Cr.
Troublesome Cr.
Mill Cr.
Beaver Island Cr.
W. Prong Beaver Cr.
Reed Cr.
Zilpha Cr.
Lil. Woolen Cr.
Big Creek
Lick Cr.
Rock Cr.
Messic Cr.
Rockhouse Cr.
Jacobs Cr.
Prong Jacobs Cr.
W. Pr. Hogans
Hogans
Jones Cr.
Wolf Island Cr.
Whitsett Cr.
Lawsonia Cr.
Logan Cr.
Light Fork Creek
Hogans Creek
Williamson Cr.
Whitsett Cr.
Cascade Cr.
Lit. Martinsville Creek
Poplar Br.
Dry Cr.
Big Ch. Fork
Town Creek
Mayo River
S. Mayo River
Crooked Cr.
Pow Pow Cr.
Buffalo Cr.
Hickory Cr.
Beaver Island Cr.
W. Prong Beaver Cr.
Reed

LOWER SECTION OF ROANOKE RIVER BASIN

GEOGRAPHIC LOCATIONS
OF SAMPLING STATIONS

STATE STREAM SANITATION COMMITTEE
N.C. STATE BOARD OF HEALTH
RALEIGH, N.C.
JANUARY, 1955

MAP 3

TABLE 1

SAMPLING POINTS AND GAGING STATIONS

DOWNSTREAM ORDER

Sta. No.	Location	Stage Ref.	Miles from River Mouth or Mouth of Tributary	Drainage Area in Sq. Miles
	Pigg River at U. S. Hwy. 220 near Rocky Mount, Va.	R.P.		
	Pigg River at Va. Hwy. 40 near Toshes, Va.	R.P.		
	Allens Creek near Buggs Island Dam, Va.	R.P.		
58	Dan River near Francisco	Rec.	159.1	124
57	Dan River at N. C. 89 near Danbury	R.P.	144.8	254
	Dan River at Danbury	R.P.	141.7	273
56	Dan River at U. S. 311 near Walnut Cove	R.P.	130.5	351.1
72	Town Fork Creek at Walnut Cove	R.P.	3.53	114
71	Town Fork Creek near Walnut Cove		3.49	
55	Dan River at Pine Hall	R.P.	125.8	495.7
	Belwe Creek near Pine Hall	R.P.	0.3	79.3
54	Dan River near Madison	R.P.	119.2	603
	Big Beavers Island Creek near Madison	R.P.	0.7	23.7
53	Dan River above Mayo River near Madison	S.G.	117.0	650
	North Mayo River near Spencer, Va.	Rec.	11.1	108
64	Mayo River near Price	Rec.	15.8	260
86	Boaz Creek near Stoneville	R.P.	1.13	2.4
86A	Boaz Creek near Stoneville 50' downstream from #86		1.12	
	South Mayo River at U. S. Hwy. 58 near Stuart, Va.	R.P.		
	North Mayo River at U. S. Hwy. 58 near Stuart, Va.	R.P.		
63	Mayo River near Mayodan	R.P.	6.1	305
88	Branch to Mayo River near Stoneville		2.8	0.1
88A	Branch to Mayo River near Mayodan	R.P.	0.5	4.1
62	Mayo River at Mayodan Dam		2.4	312
	Mayo River at Mayodan	R.P.	1.6	313
61	Mayo River near Madison (1st bridge above Dan River)	R.P.	0.2	315
	Hogan Creek near Madison	R.P.	0.68	23
52	Dan River near Wentworth	Rec.	103.9	1050
87	Branch of Buffalo Creek near Stoneville	R.P.	1.5	3.3
87A	Buffalo Creek near Leaksville	R.P.	1.8	16.6
51	Dan River at Hwy. 87 at Leaksville		93.6	1150
	Towne Creek at Va. Hwy. 674 at Philpott Va.	R.P.		
	Beaver Creek at Va. Hwy. 108 near Martinsville, Va.	R.P.		
	Jones Creek at Martinsville, Va.	R.P.		
	Leatherwood Creek at Va. Hwy. 650 near Martinsville, Va.	R.P.		
	Smith River at Martinsville, Va.	Rec.		374

Sta. No.	Location	Stage Ref.	Miles from River Mouth or Mouth of Tributary	Drainage Area in Sq. Miles
48	Smith River at Hwy. 622 above Morgans Ford, Va.	R.P.	7.3	526
47	Smith River at Spray	Rec.	4.2	538
46	Smith River at Spray 300' downstream from sewer outfall		1.6	542
45	Dan River near Leaksville	R.P.	91.9	1697
44	Dan River near Draper	R.P.	87.8	1724
43	Dan River near Mayfield		81.3	1776
84	Wolf Island Creek at Reidsville	R.P.	18.3	3.8
83B	Wolf Island Creek on Hwy. 14 near Reidsville	R.P.	16.6	7.4
83	Wolf Island Creek - North Prong at N. C. Hwy. 14 bridge near Reidsville			
83A	Wolf Island Creek near Pelham	R.P.	0.5	68.7
	Sandy River near Danville, Va.	Rec.	5.8	113
	Sandy Creek at Hwy. 732 near Danville, Va.	R.P.		
	Dan River at Danville, Va.	Rec.	62.3	2050
42	Dan River 0.25 mile south of N. C.-Va. Line near Blanche		57.8	978
85	Jones Creek near Reidsville	R.P.	4.7	5.6
85A	Hogan Creek near Providence	R.P.	3.7	96.1
	Moon Creek near Providence	R.P.	4.4	37.8
41	Dan River near Milton	R.P.	49.5	2322
82	Country Line Creek at N. C. 62 near Yanceyville	R.P.	16.2	44.2
81	Country Line Creek at Yanceyville	R.P.	4.2	47.8
	Dan River at Paces, Va.	Rec.	35.9	2550
	Dan River at South Boston, Va.	Rec.	22.6	2730
	Georges Creek near Gretna, Va.	Rec.	8.7	9.2
	Bannister River near Chatham, Va.	R.P.	9.3	
	Bannister River at Halifax, Va.	Rec.		552
	Hyco River near Roxboro	R.P.	32.8	78
	South Hyco River near Concord	R.P.	1.0	76.5
74A	Hyco River at 1st bridge from McGhees Mill		30.2	173
74	Hyco River at McGhees Mill	R.P.	26.7	191
77	Marlowe Creek at Longhurst	R.P.	8.9	6.3
76	Marlowe Creek near Longhurst	R.P.	7.4	11.2
75	Marlowe Creek near Woodsdale	R.P.	3.4	19.6
73	Hyco River near Woodsdale	R.P.	22.3	257
	Hyco River near Denniston, Va.		16.4	219
	Roanoke River at Clarksville, Va.	Rec.	193.1	7320
	Roanoke River at Buggs Island, Va.	Rec.	170.6	7780
101	Nutbush Creek at Henderson			
102	Nutbush Creek near Henderson			
37	Roanoke River at N. C. Hwy. 48 near Roanoke Rapids		135.2	8410
36	Roanoke River above Roanoke Rapids sewer		134.2	
35	Roanoke River at Roanoke Rapids	Rec.	133.6	8410
34	Roanoke River at Weldon	Rec.	130.0	8450

Sta. No.	Location	Stage Ref.	Miles from River Mouth or Mouth of Tributary	Drainage Area in Sq. Miles
33	Roanoke River at Garry's Landing		118.0	
65	Bridgers Creek near Rich Square	R.P.	3.0	5.0
32	Roanoke River near Scotland Neck	Rec.	102.5	8700
31	Roanoke River at Palmyra		79.5	8820
31A	Roanoke River below Scotland Neck - Location varies between River Mile 102 and River Mile 86.			
15	Roanoke River at Hamilton		62.1	8870
11	Roanoke River above Concho Creek near Williamston		37.9	8940
10	Roanoke River below Conoho Creek near Williamston		37.5	9060
9	Roanoke River near Williamston below Standard Fertilizer Plant		36.2	9066
	Ready Branch near Williamston	R.P.	1.0	15.5
8	Cashie River at U. S. Hwy. 13 near Windsor		20.3	170
7	Cashie River 0.25 mile below Queen St. sewer outfall at Windsor		17.6	184
	Roquist Creek near Windsor	R.P.	3.2	62.2
6	Cashie River at Sans Sauci Ferry		6.5	299
1C	Cashie River at Mouth		0	
5	Roanoke River at N. C. Pulp Co. water intake near Plymouth		9.1	
22	Horse Thorofare 100 yds. below entry of Middle River			
23	Middle River 200 yds. upstream from Horse Thorofare			
24	Middle River 500 yds. downstream from Horse Thorofare			
4	Roanoke River above Welch Creek near N. C. Pulp Co.		8.7	
12	Welch Creek at Hwy. 64 bridge near Plymouth		3.0	
13	Welch Creek at Plymouth		0.1	
3	Roanoke River below Welch Creek at Plymouth		6.8	
2	Roanoke River 500 ft. below Atlas Plywood Co.		5.8	
14	Conaby Creek at Mouth near Plymouth		1.8	21.7
1A	Roanoke River at Mouth		0	
1B	Eastmost River at Mouth			
1D	Albemarle Sound 100 yds. north of #1A			
1E	Albemarle Sound 100 yds. north of #1B			
1F	Albemarle Sound 100 yds. north of #1C			
1G	Albemarle Sound 100 yds. north of #1D			
1H	Albemarle Sound 100 yds. north of #1E			
1I	Albemarle Sound 100 yds. north of #1F			

Stage Reference

Rec. - Recording Gage
R.P. - Reference Point
S.G. - Staff Gage

TABLE 2

SAMPLING POINTS AND GAGING STATIONS

NUMERICAL ORDER

Sta. No.	Location	Stage Ref.	Miles from River Mouth or Mouth of Tributary	Drainage Area in Sq. Miles
1A	Roanoke River at Mouth		0	
1B	Eastmost River at Mouth			
1C	Cashie River at Mouth			
1D	Albemarle Sound 100 yds. north of #1A			
1E	Albemarle Sound 100 yds. north of #1B			
1F	Albemarle Sound 100 yds. north of #1C			
1G	Albemarle Sound 100 yds. north of #1D			
1H	Albemarle Sound 100 yds. north of #1E			
1I	Albemarle Sound 100 yds. north of #1F			
2	Roanoke River 500 ft. below Atlas Plywood Company		5.8	
3	Roanoke River below Welch Creek at Plymouth		6.8	
4	Roanoke River above Welch Creek near N. C. Pulp Co.		8.7	
5	Roanoke River at N. C. Pulp Co. water intake near Plymouth		9.1	
6	Cashie River at Sans Sauci Ferry		6.5	299
7	Cashie River 0.25 mile below Queen Street sewer ourfall at Windsor		17.6	184
	Roquist Creek near Windsor	R.P.	3.2	62.2
8	Cashie River at U. S. Hwy. 13 near Windsor		20.3	170
9	Roanoke River near Williamston below Standard Fertilizer Plant		36.2	9066
	Ready Branch near Williamston	R.P.		15.5
10	Roanoke River below Conoho Creek near Williamston		37.5	9060
11	Roanoke River above Conoho Creek near Williamston		37.9	8940
12	Welch Creek at Hwy. 64 bridge near Plymouth		3.0	
13	Welch Creek at Plymouth		0.1	
14	Conaby Creek at Mouth near Plymouth		1.8	21.7
15	Roanoke River at Hamilton		62.1	8890
22	Horse Thorofare, 100 yds. below entry of Middle River			
23	Middle River 200 yds. upstream from Horse Thorofare			
24	Middle River 500 yds. downstream from Horse Thorofare			
31	Roanoke River at Palmyra		79.5	8820
31A	Roanoke River below Scotland Neck - Location varies between River Mile 102 and River Mile 86.			
32	Roanoke River near Scotland Neck	Rec.	102.5	8700
33	Roanoke River at Garry's Landing		118.0	

Sta. No.	Location	Stage Ref.	Miles from River Mouth of Mouth of Tributary	Drainage Area in Sq. Miles
34	Roanoke River at Weldon.	Rec.	130.0	8450
35	Roanoke River at Roanoke Rapids	Rec.	133.6	8410
36	Roanoke River above Roanoke Rapids sewer		134.2	
37	Roanoke River at N. C. Hwy. 48 bridge near Roanoke Rapids		135.2	8410
	Sandy River near Danville, Va.	Rec.		113
	Sandy Creek at Hwy. 732 near Danville, Va.	R.P.		
	Dan River at Danville, Va.	Rec.		2050
41	Dan River near Milton	R.P.	49.5	2322
42	Dan River $\frac{1}{4}$ mile south of N. C. -Va. Line near Blanche		57.8	978
43	Dan River near Mayfield		81.3	1776
44	Dan River near Draper	R.P.	87.8	1724
45	Dan River near Leaksville	R.P.	91.9	1697
46	Smith River at Spray 300' downstream from sewer outfall		1.6	542
47	Smith River at Spray	Rec.	4.2	538
48	Smith River at Hwy. 622 above Morgans Ford, Va.	R.P.	7.3	526
51	Dan River at Hwy. 87 at Leaksville		93.6	1150
	Towne Creek at Va. Hwy. 674 at Philpott, Va.	R.P.		
	Beaver Creek at Va. Hwy. 108 near Martinsville, Va.	R.P.		
	Jones Creek at Martinsville, Va.	R.P.		
	Leatherwood Creek at Va. Hwy. 650 near Martinsville, Va.	R.P.		
	Smith River at Martinsville, Va.	Rec.		374
52	Dan River near Wentworth	Rec.	103.9	1050
53	Dan River above Mayo River near Madison	S.G.	117.0	650
	North Mayo River near Spencer, Va.	Rec.		108
54	Dan River near Madison	R.P.	119.2	603
	Big Beavers Island Creek near Madison	R.P.	0.7	23.7
55	Dan River at Pine Hall	R.P.	125.8	495.7
	Belwe Creek near Pine Hall	R.P.	0.3	79.3
56	Dan River at U. S. 311 near Walnut Cove	R.P.	130.5	351.1
57	Dan River at N. C. 89 near Danbury	R.P.	144.8	254
	Dan River at Danbury	R.P.	141.7	273
58	Dan River near Francisco	Rec.	159.1	124
	Allens Creek near Buggs Island Dam, Va.	R.P.		
	Pigg River at Hwy. 40 near Toshes, Va.	R.P.		
	Pigg River at U. S. Hwy. 220 near Rocky Mount, Va.	R.P.		
61	Mayo River near Madison (1st bridge above Dan River)	R.P.	0.2	315
	Mayo River at Mayodan	R.P.	1.6	313
62	Mayo River at Mayodan Dam		2.4	312
63	Mayo River near Mayodan	R.P.	6.1	305
64	Mayo River near Price	Rec.	15.8	260
65	Bridgers Creek near Rich Square	R.P.	3.0	5.0
71	Town Fork Creek near Walnut Cove		3.49	
72	Town Fork Creek at Walnut Cove	R.P.	3.53	114

Sta. No.	Location	Stage Ref.	Miles from River Mouth or Mouth of Tributary	Drainage Area in Sq. Miles
73	Hyco River near Woodsdale	R.P.	22.3	257
	Hyco River near Dennistón, Va.	Rec.	16.4	219
	Roanoke River at Clarksville, Va.	Rec.	193.1	7320
	Roanoke River at Buggs Island, Va.	Rec.	170.6	7780
74	Hyco River at McGhees Mill	R.P.	26.7	191
74A	Hyco River at 1st bridge from McGhees Mill		30.2	173
75	Marlowe Creek near Woodsdale	R.P.	3.4	19.6
76	Marlowe Creek near Longhurst	R.P.	7.4	11.2
77	Marlowe Creek at Longhurst	R.P.	8.9	6.3
81	Country Line Creek at Yanceyville	R.P.	4.2	47.8
	Dan River at Paces, Va.	Rec.	35.9	2550
	Dan River at South Boston, Va.	Rec.	22.6	2730
	Georges Creek near Gretna, Va.	Rec.	8.7	9.2
	Bannister River near Chatham, Va.	R.P.	9.3	
	Bannister River at Halifax, Va.	Rec.		552
	Hyco River near Roxboro	R.P.	32.8	78
	South Hyco River near Concord	R.P.	1.0	76.5
82	Country Line Creek at N. C. 62 near Yanceyville	R.P.	16.2	44.2
83	Wolf Island Creek - North Prong at N. C. Hwy. 14 bridge near Reidsville			
83A	Wolf Island Creek near Pelham	R.P.	0.5	687
83B	Wolf Island Creek on Hwy. 14 near Reidsville	R.P.	16.6	7.4
84	Wolf Island Creek at Reidsville	R.P.	18.3	3.8
85	Jones Creek near Reidsville	R.P.	4.7	5.6
85A	Hogan Creek near Providence	R.P.	3.7	96.1
	Moon Creek near Providence	R.P.	4.4	37.8
86	Boaz Creek near Stoneville	R.P.	1.13	2.4
86A	Boaz Creek near Stoneville 50 feet downstream from #86		1.12	
	South Mayo River at U. S. Hwy. 58 near Stuart, Va.	R.P.		
87	Branch of Buffalo Creek near Stoneville	R.P.	1.5	3.3
87A	Buffalo Creek near Leaksville	R.P.	1.8	16.6
88	Branch to Mayo River near Stoneville		2.8	0.1
88A	Branch to Mayo River near Mayodan	R.P.	0.5	4.1
101	Nutbush Creek at Henderson			
102	Nutbush Creek near Henderson			

Stage Reference

Rec. - Recording Gage
R.P. - Reference Point
S.G. - Staff Gage

STATE STREAM SANITATION COMMITTEE
N.C. STATE BOARD OF HEALTH
RALEIGH, N.C.
JANUARY 1955

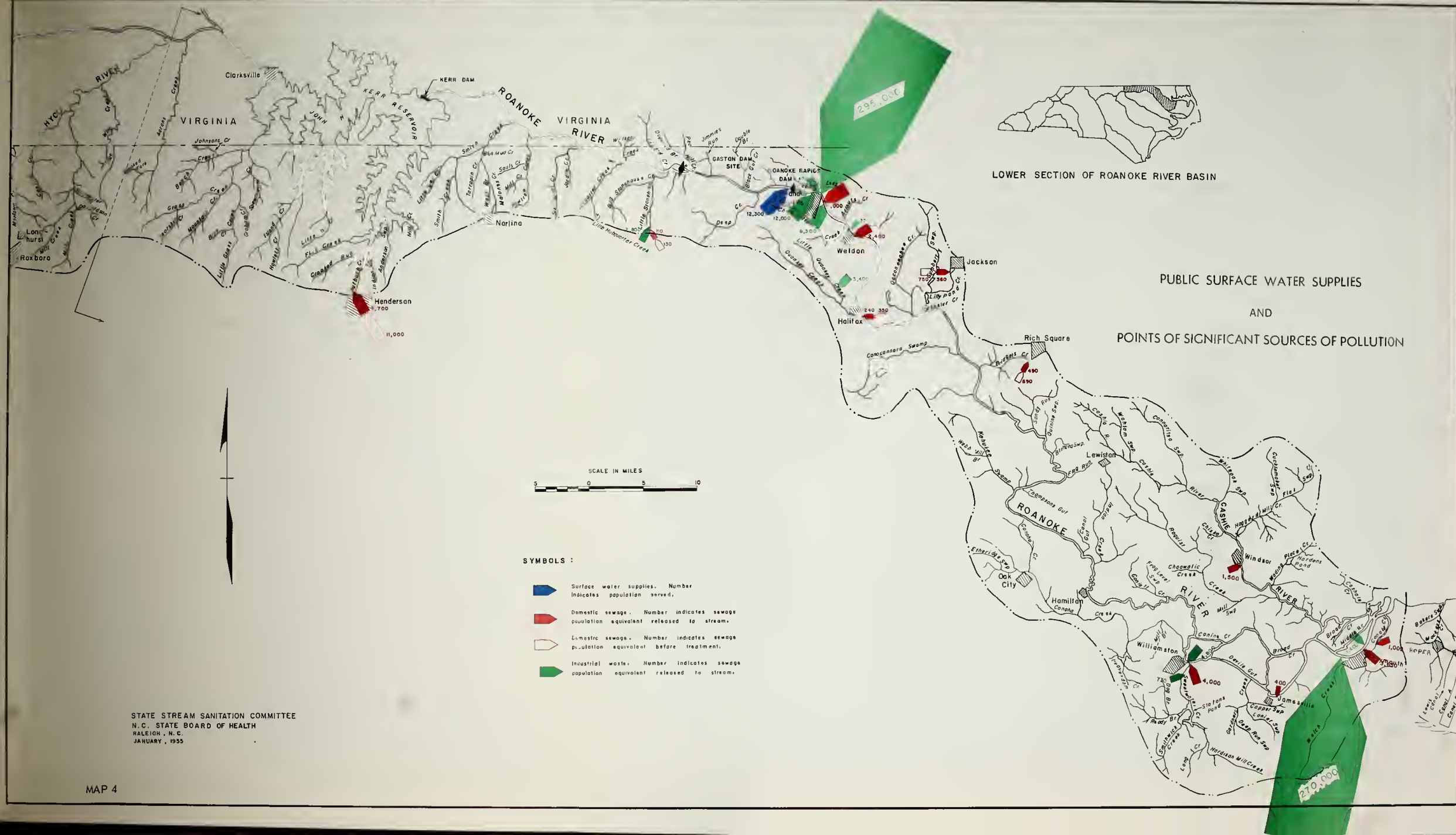
MAP 2

UPPER SECTION OF ROANOKE RIVER BASIN

PUBLIC SURFACE WATER SUPPLIES

AND

POINTS OF SIGNIFICANT SOURCES OF POLLUTION



LOWER SECTION OF ROANOKE RIVER BASIN

PUBLIC SURFACE WATER SUPPLIES AND POINTS OF SIGNIFICANT SOURCES OF POLLUTION

STATE STREAM SANITATION COMMITTEE
N.C. STATE BOARD OF HEALTH
RALEIGH, N.C.
JANUARY, 1955

MAP 4

GENERAL DESCRIPTION

The Roanoke River is an interstate stream that drains a portion of Virginia before entering North Carolina. The North Carolina portion of the basin is a long relatively narrow strip along the northern boundary of the State. The stream enters North Carolina in the low rolling hills of the Piedmont Plateau, crosses the fall line near Gaston and flows through the Coastal Plains to empty into Albemarle Sound near Plymouth.

The principal tributaries to the Roanoke River are the Dan, Mayo, and Smith Rivers. All of these streams are interstate streams and drain a large area of Virginia before entering North Carolina. The Dan River rises in Patrick County, Virginia, and flows in a southeasterly direction to enter North Carolina in Stokes County. It flows east and northeast to Madison where it is joined by the Mayo River and thence to Leaksville where it is joined by the Smith River. The stream leaves North Carolina near Leaksville junction and flows through Danville, Virginia, and then re-enters North Carolina in Caswell County near Blanche. After flowing through a portion of Caswell County, the Dan River leaves North Carolina in the vicinity of Milton and joins the Roanoke near Clarksville, Virginia.

This report is concerned only with that portion of the Roanoke River Basin in North Carolina. The area being considered is bound on the northeast by the Chowan River Basin, on the southwest by the Tar River Basin, on the west by the Yadkin River Basin, on the north by the State of Virginia, and on the south by the Cape Fear, Neuse, and Tar River Basins. The drainage area, as shown on accompanying maps, is 3520 square miles. It includes parts of 15 counties. The following tabulation gives the counties which lie partially within the watershed, together with the estimated area in square miles for each county.

County	Total Area (Sq. Miles)	Est. Area In Basin (Sq. Miles)
Bertie	693	503
Caswell	435	389
Forsyth	424	121
Granville	543	177
Guilford	651	11
Halifax	722	295
Martin	481	357
Northampton	540	185
Person	400	249
Rockingham	572	479
Stokes	459	388
Surry	539	8
Vance	269	140
Warren	445	173
Washington	336	45

Topography

The Roanoke River Basin is divided into two distinct physiographical regions. It enters North Carolina in the Piedmont Plateau and crosses the Coastal Plain.

The upper part of the basin lies in the Piedmont Region. The surface area of this region is characterized by rolling hills. One of the more distinctive features of the landscape of this area is Sauratown Mountain, which rises abruptly to an elevation of about 1,500 feet above the surrounding country. The general elevation of the western half of the Piedmont Plateau in the basin is from 650 to 1,100 feet above mean sea level, while in the eastern portion the general elevation is 460 feet above mean sea level. The highest point in the area is Sauratown Mountain, probably 2,500 feet above sea level.

In the extreme western portion of the Coastal Plain the topography is prevailingly rolling and hilly with intervening smaller areas of undulating to gently rolling country. To the east or southeast the topography becomes less broken and the surface is generally flat to undulating with gentle slopes. Elevations, in the Coastal Plain section of the basin, vary from practically sea level to 77 feet at Weldon.

There are no lunar tides in Albemarle Sound, but oscillations occur in its surface due to wind action, which persist upstream to Williamston and beyond. These wind tides have a maximum range at Williamston of about 2 feet above, and about 1.5 feet below, near sea level. As can be seen from the condensed profile, page 26a, the river has a fall of 210 feet from Clarksville, Virginia to Roanoke Rapids, North Carolina, a distance of 64 miles. From Roanoke Rapids to Weldon, a distance of about 5 miles, it has a fall of 25 feet. From Weldon to Hamilton, a distance of about 70 miles, it has a fall of only 22 feet and from this point to its mouth in Albemarle Sound, a distance of 60 miles, the river is practically at sea level.

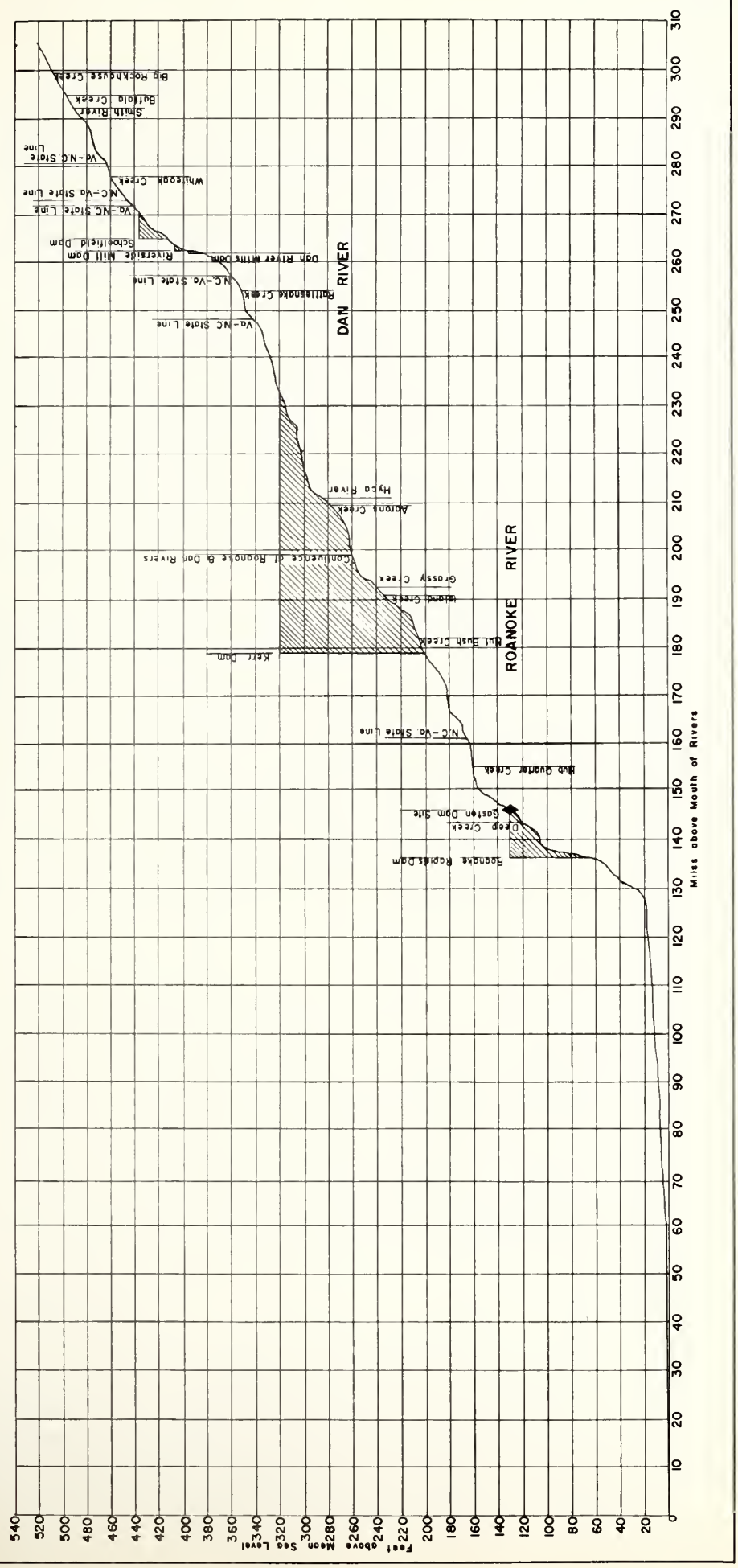
Cover and Climate

Woodland covers approximately 56 per cent of the area of the Roanoke River Basin. Of this area only 3,000 acres is public-owned forest land. Cultivated farm land covers approximately 27 per cent of the basin, while pasture land covers approximately 8 per cent.

The temperature of the Roanoke River Basin may be described as moderate, due to the location of the basin in the warm temperate zone and the relatively small variation in elevation from sea level. The mean annual temperature for the period of 1921 - 1945 was 59.9 °F. These temperatures were fairly evenly distributed between the two extremes. Summer temperatures in excess of 100 °F. are occasionally recorded, but freezing temperatures of more than one or two days duration are rare. The effect of the formation of ice on streams is negligible.

The average rainfall for the period 1921 - 1945 was 45.67 inches. Among the characteristics which were established, it was noted that at the extreme western edge the average rainfall for the 25-year period was 47 inches. This average decreased to 43.08 inches at Reidsville and to 43.2 inches at Weldon. Severe storms may occur during any month in this area. The greatest storm on record in the Roanoke River Basin occurred in August 1940. The most severe drought occurred during the year 1921.

CONDENSED PROFILES
OF
ROANOKE AND DAN RIVERS
IN
NORTH CAROLINA



Stream Flow

There are seven active stream gaging stations in the Roanoke River Basin. These stations are maintained and operated by the United States Geological Survey in cooperation with the State Department of Conservation and Development and are located: (1) Dan River near Francisco, (2) Mayo River near Price, (3) Dan River near Wentworth, (4) Smith River at Spray, (5) Roanoke River at Roanoke Rapids, (6) Roanoke River near Scotland Neck, (7) Roanoke River near Weldon.

Flow data for each of these stations are available through the District Office of the U. S. Geological Survey, Raleigh, North Carolina. Maximum, average, minimum, minimum daily, and minimum 7-consecutive day discharges for certain of the gaging stations throughout the basin are given below. The minimum average discharge for a period of 7-consecutive days with an average recurrence interval of once in 10 years has been computed for some gaging stations based on records in the area for the period 1921-51.

Dan River near Francisco, N. C.

Water-stage recorder, lat. 36°30'54", long. 80°18'12", on left bank 200 feet upstream from bridge on State Highway 704, an eighth of a mile downstream from Georges Mill, 3 miles east of Francisco, Stokes County, and 7.9 miles downstream from Little Dan River. Drainage area, 124 square miles. Records available, August 1924 to September 1955. Maximum discharges 12,400 cfs Oct. 19, 1937; average (31 years), 186 cfs; minimum, 7.1 cfs Sept. 8, 1932; minimum daily, 30 cfs Sept. 18, 20, 1932; minimum 7-consecutive-day, 32.9 cfs Aug. 31 to Sept. 6, 1930. The minimum average discharge for a period of 7-consecutive days with an average recurrence interval of once in 10 years, 41 cfs. Considerable diurnal fluctuation and some regulation by Pinnacles power plant and two reservoirs 28 miles above station with a combined capacity of 416,000,000 cu. ft.

Mayo River near Price, N. C.

Water-stage recorder, lat. 36°32'00", long. 79°59'30", on right bank 300 feet downstream from Anglins bridge, half a mile downstream from confluence of North and South Mayo Rivers, three-quarters of a mile downstream from North Carolina-Virginia State line, and 4 miles west of Price, Rockingham County. Drainage area, 260 square miles. Records available, July 1929 to September 1955. Maximum discharge, 30,000 cfs Oct. 19, 1937; average (26 years), 321 cfs; minimum 32 cfs Oct. 8, 1954; minimum daily 35 cfs Oct. 8, 1954; minimum 7-consecutive-day, 45.3 cfs Sept. 13-19, 1954. The minimum average discharge for 7-consecutive days with an average recurrence interval of once in 10 years, 66 cfs. Infrequent diurnal fluctuation at low flow caused by mills above station.

Dan River near Wentworth, N. C.

Water-stage recorder, lat. 36°25', long. 79°50', on right bank 600 feet downstream from Settles Bridge, 3½ miles northwest of Wentworth, Rockingham County, and 7½ miles downstream from Mayo River. Drainage area, 1,050 square miles, approximately. Records available, November 1939 to September 1955. Maximum discharge 56,800 cfs Sept. 18, 1945; average (16 years), 1,161 cfs; minimum, 65 cfs, Oct. 8, 1954; minimum daily, 107 cfs Oct. 2,

1954; minimum 7-consecutive-day, 126 cfs Oct. 6-12, 1954. The minimum average discharge for 7-consecutive days with an average recurrence interval of once in 10 years, 185 cfs. Slight diurnal fluctuation and regulation at low flow caused by power plants above station.

Smith River at Spray, N. C.

Water-stage recorder, lat. 36°31'45", long. 79°46'10", on right bank 0.9 mile south of Virginia-North Carolina State line, one mile north of Spray, Rockingham County. Drainage area, 538 square miles. Records available, October 1939 to September 1955. Maximum discharge 45,600 cfs Aug. 15, 1940; average (16 years), 618 cfs; minimum 60 cfs Oct. 12, 1953; minimum daily, 66 cfs Sept. 10, 1944; minimum 7-consecutive-day, 119 cfs Sept. 5-11, 1944. Flow regulated since August 1950 by Philpott Reservoir (usable capacity, 145,200 acre-ft.). Some additional regulation by power plant at Martinsville, Va.

Roanoke River at Roanoke Rapids, N. C.

Water-stage recorder, lat. 36°28', long. 77°38', on right bank 1¼ miles downstream from bridge on State Highway 48 at Roanoke Rapids, Halifax County, and at mile 133.6. Since Aug. 6, 1941, auxiliary water-stage recorder at Weldon 3.6 miles downstream from base gage. Drainage area 8,410 square miles, approximately. Records available, December 1911 to December 1932 (published as "at Old Gaston") February 1930 to September 1955. Maximum discharge 261,000 cfs Aug. 18, 1940; average, (44 years) 8,364 cfs; minimum, 458 cfs Sept. 21, 1932; minimum daily 472 cfs, Sept. 21, 1932; minimum 7-consecutive-day 521 cfs Sept. 19-25, 1932. Flow regulated since August 1950 by Philpott Reservoir on Smith River (usable capacity, 145,200 acre-feet) and John H. Kerr Reservoir (usable capacity, 2,324,300 acre-feet) and since June 1955 by Roanoke Rapids Reservoir (usable capacity 79,600 acre-feet).

Roanoke River near Scotland Neck, N. C.

Water-stage recorder, lat. 36°12', long. 77°23', on right bank 10 feet upstream from bridge on U. S. Highway 258, 5-3/4 miles north of Scotland Neck, Halifax County, and at mile 102.5. Since Jan. 13, 1941, auxiliary water-stage recorder 8.9 miles downstream. Drainage area 8,700 square miles, approximately. Records available July 1896 to May 1903 (published as "at Neal"), August 1940 to September 1955. Maximum discharge 260,000 cfs Aug. 19, 1940; average (21 years) 8,862 cfs; minimum 750 cfs Nov. 10, 1952; minimum daily, 750 cfs Nov. 10, 1952, minimum 7-consecutive-day, 853 cfs Nov. 9-15, 1952. Flow regulated since August 1950 by Philpott Reservoir on Smith River (usable capacity, 145,200 acre-feet) and John H. Kerr Reservoir (usable capacity, 2,324,300 acre-feet) and since June 1955 by Roanoke Rapids Reservoir (usable capacity, 79,600 acre-feet).

ECONOMIC DEVELOPMENT

Population

The estimated population of the Roanoke River Basin based on the 1950 census of population is 283,670. The basin encompasses twenty-three municipalities. Of the total population in the basin, an estimated 24 per cent resides in the cities and towns.

During the period 1940 - 1950 the population of the State increased 13.7 per cent. During the same ten-year period the population of the basin increased 3.6 per cent.

The industrial activities of the area are many and varied and include such activities as the manufacture of textiles, tobacco products, furniture, pulp and paper. The industrial centers of most importance are Leaksville, Spray, Draper, Reidsville, Roanoke Rapids, and Plymouth.

In 1947, the latest year of record, there were 379 manufacturing establishments in the counties lying wholly or partially within the basin. These establishments employed 26,881 persons, whose salaries and wages amounted to $51,129,000. The value added to the products through manufacture was reported to be $151,061,000. The figures for Forsyth, Guilford, and Surry Counties, which have small areas lying within the basin, are not included in the above totals.

Electric Power

Electric power demands are supplied by the transmission lines of the Carolina Power and Light Company, the Virginia Electric and Power Company, and the Duke Power Company. Some of the industries in the area operate generators that supply all or a part of their requirements for electricity. The United States Government, through its operation of Kerr Dam, sells electricity to the private power companies that supply the area. The power plants in the basin, together with the rated capacity and type of each installation, are listed in the following table:

Power Plant Installation
Roanoke River Basin

Name	Rated Capacity	Type	Owner
Walnut Cove	680 KVA	Hydro	Duke Power Company
Dan River	180,000 KVA	Steam	Duke Power Company
Roanoke Rapids	91,000 KW	Hydro	Virginia Electric & Power Co.
*Gaston		Hydro	Virginia Electric & Power Co.

*Proposed

Forest Resources

Forest land constitutes about 55 per cent of the Roanoke River Basin. The State government owns 3,000 acres of the forest land. According to Bulletin No. 53 of the North Carolina Department of Conservation and Development

entitled "Forest Resources Appraisal of North Carolina," the forest land in the various counties situated partially within the basin as of 1945, and the timber sawed in these counties in 1942 were:

County	Total Forest Land (Acres)	Forest Land Not Publicly Owned	Public Forest Land	Pulpwood Production 1955 (Standard Cords)	Lumber Sawed M Ft. b.m. 1942
Bertie	306,916	306,916		24,566	49,055
Caswell	152,842	152,842		5,091	16,996
Forsyth	97,690	97,690		812	9,861
Granville	202,257	202,257		21,880	41,819
Guilford	180,405	180,405		890	35,398
Halifax	239,357	239,357		47,178	18,427
Martin	191,169	191,169		15,632	26,300
Northampton	174,182	174,182		26,076	35,356
Person	143,360	143,360		6,354	19,177
Rockingham	166,200	166,200		4,670	13,388
Stokes	144,530	141,530	3,000	327	15,543
Surry	179,057	178,147		27,011	17,687
Vance	68,520	68,520		7,795	5,708
Warren	155,500	155,500		25,600	32,027
Washington	156,764	156,764		23,518	10,694
Total	2,558,749	2,554,839	3,000	237,400	347,436

Agriculture

The soils of the Roanoke River Basin are well adapted to the growing of a wide variety of agricultural products. Principal crops grown in the basin are tobacco, corn, and cotton with a variety of other crops, the most important of which are small grains, soybeans, peanuts, and potatoes. Dairying is a growing industry due to favorable conditions for growing hay and forage. The table below lists the total value of the eleven principal crops grown within each county in the basin. The crops considered are: tobacco, cotton, peanuts, Irish potatoes, sweet potatoes, corn, wheat, oats, soybeans, lespedeza, and hay. These data were taken from the 1953 issue of "North Carolina Agricultural Statistics."

County	No. of Farms 1950	Acres Harvested 1952	Value of Products 1951
Bertie	3,138	83,915	$15,293,590
Caswell	3,051	55,065	10,043,870
Forsyth	3,294	56,711	5,738,640
Granville	3,335	66,612	14,530,030
Guilford	4,768	89,382	10,502,750
Halifax	4,474	133,358	21,087,830
Martin	2,787	75,805	17,212,800
Northampton	3,824	114,696	15,643,430
Person	2,845	58,748	10,586,060
Rockingham	4,402	71,405	11,691,950
Stokes	3,629	55,615	10,202,270
Surry	4,306	67,100	11,734,850
Vance	2,404	42,356	10,358,370
Warren	3,162	56,257	9,195,130
Washington	866	30,411	2,858,250
Total	50,258	1,063,382	$176,679,820

Dairy, Livestock, and Poultry

The dairy, livestock, and poultry industries are growing activities in the basin. Soil and climatic conditions are generally favorable for growing grain, hay, and forage crops. The following data taken from "Preliminary North Carolina Farm Census Summary, 1953 Crops" shows number of livestock and hens of laying age on the farms in the counties that are within or partially within the basin.

Livestock On Farms January 1, 1954

County	Cows & Heifers Two Years Old & Over		Hens & Pullets of Laying Age
	Kept Mainly For Milk	Kept Mainly For Beef	
Bertie	884	3,019	68,035
Caswell	3,963	1,851	54,122
Forsyth	2,632	3,499	69,419
Granville	4,208	3,321	52,594
Guilford	7,325	3,644	100,019
Halifax	2,289	5,057	70,123
Martin	838	1,801	57,304
Northampton	1,556	2,435	83,481
Person	3,487	1,931	51,910
Rockingham	5,209	3,699	98,302
Stokes	4,341	1,520	108,934
Surry	6,492	3,903	102,904
Vance	2,451	829	39,671
Warren	3,350	2,455	46,812
Washington	330	1,060	19,143
Total	49,292	40,024	1,022,773

Available information* indicates the total value of dairy products, poultry and poultry products, livestock, and swine sold during 1949 to be:

County	Dairy Products Sold	Cattle Sold Alive	Poultry And Poultry Products Sold Alive	Swine Sold Alive
Bertie	$ 11,418	$ 77,757	$ 75,233	$478,058
Caswell	173,641	75,327	109,888	27,377
Forsyth	651,537	177,821	474,002	81,920
Granville	212,450	162,956	248,717	61,960
Guilford	1,236,611	475,716	620,314	99,567
Halifax	79,277	298,658	61,870	540,868
Martin	68,690	55,295	77,802	547,611
Northampton	42,342	106,042	106,525	409,709
Person	72,931	54,654	74,738	38,214
Rockingham	258,613	151,503	200,828	40,197
Stokes	118,261	99,812	351,865	19,833
Surry	255,767	213,984	399,179	43,551
Vance	105,110	60,239	55,781	36,710
Warren	253,644	168,361	39,194	54,791
Washington	24,033	34,497	50,833	169,388
Total	$3,564,325	$2,212,622	$2,646,769	$2,649,754

*1950 U. S. Census of Agriculture.

Mineral Resources*

The mineral resources within the drainage area of the Roanoke River Basin are, for the most part, classed as non-metallic. The more important of these are sand, gravel, and crushed stone used in construction, clay and shale used in the manufacture of brick and tile as well as some mica and granite. In recent years a tungsten deposit has been discovered in Vance County. It is the largest producing field in North America, with an output of some 200 tons of ore daily, valued at $1,000,000 annually. Deposits of copper are found in Granville, Person, and Guilford Counties. Detailed production figures for copper ore cannot be given; the figures as published by the United States Bureau of Mines are combined with Tennessee and Pennsylvania. A deposit of molybdenum has been found in Halifax County. In the fall of 1943 the prospects were core drilled by the United States Bureau of Mines and classed as "nearly commercial." Ilmenite, an ore of titanium, is found in the sands in the rivers and sounds of the Coastal Plain. In February, 1942, E. I. du Pont de Nemours and Company of Wilmington, Delaware, entered into a contract with the North Carolina Department of Conservation and Development for an investigation of these deposits. The Dupont Company undertook some exploration in the vicinity of Plymouth, but later abandoned the project.

Fish and Wildlife

Fishing is extensive throughout the basin. The North Carolina Wildlife Resources Commission reports that large variety of fish are to be found in the waters of the basin. It is reported that trout, small mouth bass, large mouth bass, striped bass, bream, crappie, and catfish are caught. Commercial fishing is a major source of income along the Roanoke River below Weldon. White perch, shad, and striped bass are the species caught.

The annual migration of the striped bass, up the Roanoke River to spawning grounds in the vicinity of Weldon, is of considerable economic importance to the area and provides extensive opportunities for sport fishing to the people of the entire State. It has been estimated that the economic value of the striped bass exceeds $1,000,000. The State-owned fish hatchery at Weldon is the only known striped bass hatchery in the world and annually hatches millions of striped bass that are returned to the waters of the area.

Game of a wide variety are found in the area and hunting is prevalent throughout the basin. A few wild turkeys are to be found in addition to quail, rabbit, squirrel, and other small game. Deer are to be found along the lower Roanoke River.

It is difficult to estimate the value of our fish and wildlife; however, the amount of money spent to harvest it can be measured. The amount of money spent each year in harvesting game and fish for sport and that received from the commercial aspects of trapping and fishing places our fish and wildlife resources on par with many of our big businesses.

State Parks

There is only one State Park in the basin. It is located in the Sauratown mountains of Stokes County and is known as the Hanging Rock State Park. Facilities for swimming, boating, fishing, picnicking, camping, and hiking together with vacation cabins are provided.

Recreation

Aside from the State Park and a few isolated developments in the upper portion, the potential recreational assets of the basin are relatively undeveloped.

Hanging Rock State Park in Stokes County has been rather extensively developed and affords splendid recreational facilities for the many visitors who annually take advantage of these facilities. Lakes created in connection with power development afford excellent opportunities for fishing and boating.

Transportation

The entire river basin is served by a network of modern highways which connect the population centers. Also, improved farm-to-market roads throughout the counties provide excellent ingress and egress for industrial workers to industrial plants as well as a satisfactory means of transporting farm produce to market outlets.

Railway, bus, and motor transportation for both passengers and freight is fairly comprehensive throughout the basin. At present there are nine railway companies, numerous motor transportation companies, and bus companies providing services in the area.

The Roanoke River is used for navigation as far up river as Hamilton. Oil products, pulpwood, chemicals, paper and other products are transported by barge. The Cashie River is also used to ship pulpwood to the paper mills.

THE SURVEY

General

A study was made of the water uses within the Roanoke River Basin. Tables 3 and 4, pages 49 through 50 show the sources of public and industrial water supplies together with certain other information pertaining thereto. To determine the contributors of significant pollution into the waters of the basin, a systematic investigation of all sources, both municipal and industrial was conducted. This procedure involved the determination of the volumes and characteristics of all sewage and industrial wastes, either treated or untreated, that were being discharged into the waters of the drainage basin. This information, together with certain other pertinent data, is shown in Table 5, pages 51 through 53, inclusive. In addition, the survey included conferences with County Health Officials, Wildlife Protectors, Soil Conservation Officials, County Farm Agents, and others concerning the usage of the waters within the watershed.

Sampling Stations and Procedures

The survey entailed a program of stream sampling from the upper stretches of the main river to the Albemarle Sound and extending throughout the major tributaries in the basin with particular emphasis on those streams receiving significant pollution loads. Sampling stations were located so as to have at least one a short distance above the source of pollution, and where feasible, several below the source of pollution. The location of sampling stations is shown on the map entitled "Roanoke River Basin, Geographic Locations of Sampling Stations" pages 11 and 13. Table 1, pages 15 - 17, gives the sampling points and gaging stations in downstream order together with the miles from the mouth, and the drainage area in square miles. Table 2, pages 18 - 20 gives the sampling points and gaging stations in numerical order together with the miles from the mouth, and the drainage area in square miles.

Samples were collected from the streams after the waste had had reasonable opportunity for dilution and mixture with the receiving waters, and in such manner as would give a representative sample. The methods of sampling were varied to fit individual conditions and the types of materials being sampled. Sampling operations were conducted in accordance with the procedures and methods outlined in "Standard Methods for Examination of Water and Sewage", Ninth Edition, published jointly by the American Public Health Association and the American Water Works Association. Special equipment was utilized to collect stream samples in conformity with standard procedures, and collecting devices prevented aeration of dissolved oxygen samples while they were being collected. Apparatus and chemical reagents in appropriate field kits were used by the survey crews for the determination of dissolved oxygen, water temperature, and other physical features of stream at the time of sampling. Sampling stations were also established on certain streams that were known to be free of appreciable sewage and industrial pollution. The results of samples collected from these sampling stations were used in establishing a base line of stream quality in the general area.

Hydrological Measurements

Since accurate data regarding stream flows at sampling times are essential, a cooperative program was worked out with the Raleigh office of the United

States Geological Survey, an Agency, one of whose major functions is collecting stream flow data. Their regularly operated stream flow measurement stations were utilized and a network of secondary flow measurement sites was established. Within the basin there were seven recording gage stations and thirty-nine sites where stage observations were obtained by manual devices. In addition, there were a number of sites in Virginia at which flow measurements were made. In general, following the selection of a sampling site, the vicinity was investigated for the location that would provide the best discharge relation. Then at intervals during the sampling period flow measurements were obtained to cover the range found in sampling. The cross-sectional area of the stream was determined at various points, and the velocity of flow was measured by means of a current meter. From these data the stream flows were calculated.

Laboratory Tests and their Significance

When sampling a stream certain tests must be made, of necessity, in the field at the time of sampling such as temperature, dissolved oxygen and certain observations connected with the senses of sight and smell. Other analytical determinations such as pH, alkalinity, hardness, chlorides, B.O.D., and MPN of coliform bacteria were made in mobile laboratories. Other portions of the samples were iced in special containers and shipped to the State Laboratory of Hygiene in Raleigh for such special tests as suspended solids, dissolved solids, total solids, turbidity, color, ammonia nitrogen, nitrate nitrogen, and nitrite nitrogen. The analytical results are shown in Table 6, pages 54 through 156. Certain data is shown graphically. The dissolved oxygen and B.O.D. at various stations are shown on graphs 1 through 4, 12 and 13, pages 171 through 177 and 193 through 195, while the M.P.N. values of coliform bacteria are shown on graphs 5 through 11 and 14, pages 179 through 191 and 197. Dissolved oxygen profiles for that segment below Roanoke Rapids are shown on graph 15, page 199.

As a background for the presentation and discussion of laboratory data, certain rules and regulations have been adopted by the State Stream Sanitation Committee for use in classifying and assigning standards of quality and purity to designated waters in North Carolina. For each class of water designated there are accompanying standards of water quality and purity which shall be applied thereto. Based on best usage these classes for fresh surface waters are A-I, A-II, B, C, D, and E; and for tidal salt waters are SA, SB, SC, and SD.

Class A-I is intended to provide water which is suitable for drinking purposes with only chlorination as a means of purification. Class A-II is applicable to streams used as a source of public water supply, the quality of which must be such as to meet the Public Health Service Drinking Water Standards, and to be safe for public consumption after treatment consisting of coagulation, sedimentation, filtration, and post-chlorination. Class B is intended to provide water of such quality that it will be suitable and safe for bathing and other recreational purposes. Class C is intended to provide water that is suitable for the propagation of fish and wildlife. Class D is applicable to waters which will be used principally in agriculture and for industrial water supply. The quality of this water will be such that it may be used for agricultural purposes without treatment, will not injure livestock, and will be suitable for irrigation. It will also be suitable for industrial cooling water without additional treatment and for industrial process water with such special treatment as may be necessary to provide a water of the quality that is required for the specific use to be made of it.

Class E is a designation given to fresh waters used principally for navigation and sewage and waste disposal, but not to the extent that an offensive condition will exist.

For salt or tidal waters Class SA is intended to provide waters suitable for the culture of shellfish and the gathering of same for marketing. Class SB is intended to provide water suitable for bathing and recreation. Class SC is intended to provide water suitable for the propagation of fish and wildlife. Class SD is for waters used for navigation and waste disposal, but not to the extent that an offensive condition will exist.

Under certain conditions it is necessary to make tests for specific substances, such as toxic materials; however, in the discussion which follows the requirements for stream waters for various uses are considered in terms of the usual laboratory tests that are made. As far as practical and applicable all chemical and bacteriological examinations were made in accordance with "Standard Methods For The Examination of Water and Sewage", Ninth Edition. The routine determinations together with a brief discussion of each are as follows:

Temperature - The temperature of stream waters is useful in indicating the solubility of gases in it and hence the saturation level of dissolved oxygen; and the effect on biological activities. The level of dissolved oxygen varies inversely with the temperature, being lower at higher temperatures and vice versa. Temperature has a marked influence on the rate of natural purification due to biological activity, which is greater at higher temperatures up to about 140°F. and diminishes at lower temperatures.

Turbidity - Turbidity is an index of the density of the suspended matter in a sample and is measured by comparison of the sample with a standard suspension of "Fuller's Earth."

Color - The color of water is usually considered due only to substances in solution. The color of natural water is in general due to microscopic plant growths and certain soluble organic materials. Usually very intense and varied colors are produced by certain industrial waste, such as dyes, etc. Color is measured by comparison of the sample with a standard.

pH Value - The hydrogen-ion concentration of water, expressed as pH, is a measure of its acidity or alkalinity. Water having a pH value of 7.0 is considered neutral, that is, neither acid or alkaline. Values higher than 7.0 indicate the presence of alkaline earth salts and values lower than 7.0 indicate the presence of acids or acid salts. In North Carolina the pH in most of the streams, unaffected by sewage and industrial waste, will vary from about 6.0 to 7.5. Swamp waters and certain other natural waters may have a lower range. For normal fish life the pH range should be within the limits of 4.3 to 8.5.

Alkalinity - The alkalinity of natural waters represents its content of carbonates, bicarbonates, hydroxides, and sometimes borates, silicates, and phosphates. It is measured by titrating with a standard acid solution to standard hydrogen-ion concentrations. The results are expressed in parts per million (ppm) of calcium carbonate. Within normal limits, the alkalinity and hydrogen-ion concentration have little sanitary significance, but they are of value in handling industrial waste and in controlling the various waste treatment processes.

Dissolved Oxygen - Dissolved oxygen represents the amount of oxygen dissolved in the water. This test is one of the most valuable analytical measures of the condition of a given water. When water contains as much oxygen as it can dissolve, it is saturated; when it contains less, it is undersaturated; and under certain unusual conditions it may become supersaturated. In relatively clean streams the dissolved oxygen content tends to remain at or near saturation. Dissolved oxygen is essential to the natural purification of stream water, as well as the maintenance of fish and other aquatic life. In natural streams the dissolved oxygen is used to support the biochemical oxidation of organic wastes, but tends to be replaced by absorption from the atmosphere and by the photosynthetic action of certain green plants. A deficiency in the dissolved oxygen in a stream indicates the presence of polluting substances, which are using the oxygen from the stream water. The degree of this deficiency is a measure of the deoxygenating effect of the particular waste, and hence an index of the degree of pollution present in the stream. Where a stream receives wastes at a single point and they are rapidly mixed with the water, the dissolved oxygen content tends to follow a typical sag curve on the basis of time, temperature, oxygen demand, and the rate of reaeration in the stream.

In general, the minimum oxygen requirements for streams are dependent on the usage which they must serve. In North Carolina studies indicate that an oxygen minimum of 5.0 ppm is necessary to support trout adequately and 4.0 ppm for other forms of game fish. Fish may survive at oxygen levels of two or three parts per million; but it is considered that at least 4.0 ppm is necessary to permit the proper breeding and self-maintenance of the more desirable forms of fish.

Five-day Biochemical Oxygen Demand (B.O.D.) - The B.O.D. test is the most important made in sanitary analyses to determine the polluting power, or strength, of sewage or organic industrial waste. It serves as a measure of the amount of clean diluting water or degree of treatment required for the successful disposal of the polluting substance. The standard test involves the incubation of sealed samples of a stream water for five days at a temperature of 20°C., and the measurement of the loss of dissolved oxygen by the sample during the period of incubation. This loss represents the five-day 20°C. B.O.D. of the sample. The B.O.D., therefore, is a measure of the amount of dissolved oxygen that may be expected to be absorbed from a stream in five days at 20°C. in order to satisfy the biological and chemical oxidation of the organic pollutants carried in the stream at the time of sampling.

Usually there is a definite relationship between the dissolved oxygen content and the B.O.D. Generally in streams below a source of pollution, it is noted that the D.O. is reduced and the B.O.D. is increased. As the natural purification processes set in downstream, the D.O. increases and the B.O.D. decreases. These changes continue, other factors being the same, until the D.O. and the B.O.D. become normal, indicating that the stream has recovered from the initial pollution.

The Most Probable Number (MPN) of Coliform Bacteria - The coliform content is used as a general index of the sanitary condition of a stream. This determination shows the approximate density of a group of bacteria which are always present in large numbers in sewage and are relatively few in numbers

in other stream pollutants. Coliform bacteria are normal inhabitants of the intestines of all warm blooded mammals and are discharged in very large numbers in human feces, which constitute the principal source of these bacteria in sewage.

The most important use of the coliform content is evaluating the water as a source of raw water for public water supply, its use for bathing purposes, and shellfish culture.

The recognized standards for surface waters to serve as a source of public water supply with various types of treatment are specified by the United States Public Health Service and designate the following limiting monthly arithmetical average MPN of coliforms per 100 ml.: (1) For chlorination only without any other treatment - should not exceed 50; (2) For treatment equal to coagulation, sedimentation, filtration, post-chlorination - should not exceed 5,000 nor exceed this density in more than 20% of the samples; (3) For treatment equal to pre-chlorination, coagulation, sedimentation, filtration, and post-chlorination - should not exceed 20,000 in more than 5% of such samples; (4) over 20,000 unfit for treatment.

There are no generally recognized standards for the classification of bathing waters with respect to their coliform bacteria content. Coliform bacteria standards have been proposed that vary from not over 50 to not over 3,000 per 100 ml. In reviewing the coliform bacteria results of various surface water samples it is evident that the major emphasis should be placed on the sanitary survey and the proper sanitary supervision of the waters by the controlling health authorities, rather than the bacteriological content in designating areas for swimming.

GENERAL SURVEY FINDINGS

In order to simplify the presentation of the survey findings relative to present and future land and water uses, the basin has been divided into two sections which are fairly well defined from the standpoint of topography and land and water usage characteristics. Significant land and water uses are discussed for each section and specific factual data relative to major sources of pollution and their effects are analyzed. Additional data are given in Table 3, "Public and Industrial Ground Water Supplies"; Table 4, "Public and Industrial Surface Water Supplies"; and Table 5, "Points of Significant Pollution."

SECTION I

DAN RIVER AND TRIBUTARIES IN NORTH CAROLINA

Land Characteristics and Uses

The entire watershed of the Dan River is located in the Piedmont region of the State. The topography is characterized by rather high even-surfaced upland that has been dissected by valleys of numerous streams. The relief, brought about by the dissection of the Plateau country by drainage ways, includes narrow to fairly wide interstream ridges that range from undulating and gently rolling to rolling, with hilly, steep, and broken land on slopes leading to streams. The most distinctive feature of the landscape is Sauratown Mountain, located in the west central part of Stokes County. The agricultural activities of the area include the growing of field crops and animal husbandry, including dairying, beef cattle, and poultry. Tobacco is the principal source of farm income.

Existing Stream Uses

Surface waters serve as an important source of both municipal and industrial water supply. Surface waters serve as the source of water supply for seven municipalities serving an estimated population of 32,850 persons. Industries use an estimated volume of sixty-seven million gallons of water daily from the streams of this drainage area.

Fishing is prevalent in most of the larger streams in the area. The environmental conditions of the upper reaches of the Dan River are suitable for trout and part of the Dan River has been designated as trout waters by the North Carolina Wildlife Resources Commission. Bass, bream, and crappie are common to these waters. Several streams of the basin have been stocked with bass and bream.

The recreational potential of the drainage area of the Dan River is more fully developed than the main stem of the Roanoke. The scenic nature of the Sauratown Mountain section, as well as the relatively clean water affords an excellent environment for recreation. The North Carolina Department of Conservation and Development operates, maintains, and administers, through its Division of State Parks, the Hanging Rock State Park located in the Sauratown Mountains. The Park includes 3,865 acres and offers swimming, boating, fishing, picnicking, camping, hiking, and vacation cabins for the diversion of its visitors.

The Boy Scouts maintain and operate Camp Cherokee near Wentworth. The Camp has a spring fed lake that is used for swimming and boating.

The Episcopal Church owns and operates Camp Vade Mecum for both boys and girls. The Camp has a swimming pool that is supplied with water from a nearby stream.

The Department of Conservation and Development reports that there are three camps (Camp Civitan, Camp Lassiter, Camp Betty Hastings) located on Redbank Creek in Forsyth County. Campers use the stream for recreational purposes, including swimming.

Agricultural uses of surface water include both livestock watering and irrigation. Creeks and branches are used extensively for livestock watering. At the time of this survey, the use of streams for irrigation was limited to a few isolated areas; however, it is expected that this use will become more extensive.

There is considerable use of the streams in this area for waste disposal. There are nineteen significant sources of sewage and industrial wastes tributary to these waters and in many instances such discharges are resulting in conditions that seriously jeopardize the other necessary uses which must be made of the streams. The total sewage and waste load tributary to the streams, expressed in population equivalent (P.E.), is estimated to be 66,955 of which 44,110 is due to industrial waste discharges. The individual sources of pollution are discussed as follows:

Town of Walnut Cove - The municipal sewer system serves an estimated population of 1,100 and discharges the raw sewage into Town Fork Creek. This pollution is significant from the standpoint of its effects on the receiving stream.

Town of Stoneville - The municipal sewerage system serves an estimated connected population of 530. Primary treatment is provided by two Imhoff tanks and one septic tank. The effluents of these tanks are discharged into three unnamed branches which, in turn, empty into Buffalo Creek, Boaz Creek, and Mayo River. If these facilities are properly operated and maintained, they should provide adequate treatment for the sewage from the population now connected.

Town of Mayodan - The municipal sewerage system serves an estimated connected population of 2,000 as well as receiving the domestic sewage from the Washington Mills. Secondary treatment is provided before the sewage is discharged into the Mayo River. The population equivalent of this effluent is estimated to be 500.

Washington Mills Company, Mayodan - This plant discharges an estimated 40,000 g.p.d. of untreated industrial waste into the Mayo River. This waste has an estimated population equivalent of 2,400.

Town of Madison - This municipal sewerage system serves an estimated population of 1,200. Primary treatment is provided before the sewage is discharged into the Dan River. The population equivalent of this waste is estimated to be 900. This pollution is significant from the standpoint of its effects on the water supply at Leaksville.

Town of Spray - This municipal sewer system serves an estimated connected population of 5,000 persons. The wastes collected by this system are discharged without treatment into the Smith River and contribute significant bacterial pollution to the stream as well as contributing oxygen consuming material and solids to the stream.

Fieldcrest Mills, Spray - Three of Fieldcrest Mills' plants are located at Spray. Wastes from these plants are discharged without treatment into the Smith River. These wastes add a significant amount of color and oxygen consuming material to the stream. The population equivalents of these wastes are estimated to be as follows:

Fieldcrest Mills - Electric Blanket Mill - 730.
Fieldcrest Mills - Rayon Mill - 330.
Fieldcrest Mills - Bleach and Finish Mill - 8,280.

Leaksville Woolen Mills, Inc. discharges untreated wastes into Smith River. The population equivalent of these wastes is estimated to be 500.

Town of Leaksville - This municipal sewer system discharges untreated sewage from an estimated population of 5,080 persons into the Dan River. These wastes affect the river deleteriously by increasing the bacterial pollution, and contributing color, solids, and oxygen consuming material to the stream.

Fieldcrest Mills, Leaksville - This Company operates two plants at Leaksville that discharge untreated sewage and industrial wastes into the Dan River. These wastes add a large amount of color and oxygen consuming material to the river. The population equivalents of these wastes are estimated to be as follows:

Fieldcrest Mills - Kranstan Rug Mill - 25,000.
Fieldcrest Mills - Bedspread Mill - 1,200.

Town of Draper - This municipal sewer system discharges untreated sewage from an estimated population of 800 persons into the Dan River. The raw sewage contributes solids and bacterial pollution to the stream.

Fieldcrest Mills, Draper - The Company operates two plants in Draper that discharge both sewage and industrial wastes into the Dan River. The sewage receives primary treatment; however, the industrial wastes receive no treatment before being discharged to the stream. The population equivalent of the wastes from each of these plants is estimated to be as follows:

Fieldcrest Mills - Blanket Mill - 1,000
Fieldcrest Mills - Sheeting Mill - 700.

City of Reidsville - The public sewerage system serves an estimated population of 10,000 persons; however, all of the wastes collected by this system are not discharged into the waters of the Roanoke River Basin. Waste collected from an estimated population of 4,000 persons is given primary treatment and discharged into Wolf Island Creek and Hogans Creek. The City has employed engineers to study the waste disposal problem and to submit plans for the renovation of their waste disposal facilities.

Yanceyville Sanitary District - This sewerage system provides primary treatment for the sewage collected from an estimated population of 800 persons. This plant also serves two schools having a combined enrollment of approximately 1,100 students. The treatment facilities are overloaded, since the Imhoff tank was designed to serve a population of only 600 persons.

Town of Roxboro - The Roxboro sewage system serves the Town of Roxboro, the communities of Brooksdale, Longhurst, and Cavel as well as industries in the area. It is estimated that the sewer system serves a population of 6,250 persons and also discharges approximately 600,000 g.p.d. of industrial waste having an estimated population equivalent of 4,000. These wastes are discharged without treatment into Marlowe Creek and produce an odorous as well as an unsightly condition. The heavy pollutional load renders the stream unsuitable for livestock watering and irrigation.

Potential Future Development

This area has excellent possibilities for further industrial development. Such development will necessarily increase the need for suitable sources of water supply for domestic and industrial uses, as well as suitable areas for recreational activities such as bathing and fishing. There will undoubtedly be an increase in the use of streams for irrigation.

SECTION II

THE LOWER ROANOKE RIVER AND ITS TRIBUTARIES IN NORTH CAROLINA

Land Characteristics and Uses

The watershed of the Lower Roanoke River drains parts of two physiographical regions of the State. That portion that is upstream from the vicinity of Gaston drains a part of the Piedmont region whereas that portion below the "fall line" in the vicinity of Gaston drains a part of the Coastal Plain. The relief of the Piedmont plateau region is generally decidedly rolling or hilly, whereas in the Coastal Plain region the land is prevailingly flat or very gently rolling, the more rolling areas occurring along stream courses. The agricultural activities in the area include the growing of field crops, livestock, and poultry. Tobacco is the principal source of farm income.

Existing Stream Uses

Surface waters serve as the source of supply for both municipalities and industries. Streams in the area serve as the source of raw water for two public water supplies, serving an estimated population of 12,300 persons. Industries in the area use an estimated volume of sixty-five million gallons of process water daily.

Fishing is prevalent in most of the larger streams of the area. Bass, bream, crappie, and other species of pan fish are common to the waters of the area. The Lower Roanoke River is a very important spawning ground for striped bass or "rockfish." The North Carolina Wildlife Resources Commission operates the only known striped bass hatchery in the world at Weldon. The

striped bass fishing has been valued at more than one million dollars. The John H. Kerr Reservoir and its backwaters in North Carolina is a very popular sport fishing area.

The recreational potential of the lower Roanoke has not been very fully developed. There are no State parks or camps in the section. That portion of John H. Kerr Reservoir in North Carolina offers great opportunities for recreation. There are several developed landings along the lake, some operated by Wildlife Clubs and others by private citizens. The lake affords opportunities for fishing, boating, water skiing, and swimming.

Plans have been submitted to the Federal Power Commission for the construction of hydroelectric projects that will utilize practically all the hydroelectric power potential of the Roanoke River. Of the existing and proposed power projects the Kerr project is the largest. The Kerr Dam was built by and is operated by the United States Corps of Engineers for flood control and power generation. The Virginia Electric and Power Company has completed the construction of a hydroelectric project near Roanoke Rapids and has applied for a license from the Federal Power Commission for the construction of another dam to be known as the Gaston Project. The backwaters of the Roanoke Rapids Dam extend to the site of the proposed Gaston Dam which if constructed will, in turn, create a pool extending upstream to the toe of the John H. Kerr Dam.

Even though a hydroelectric project adds no pollutants to the water, it may from the standpoint of altering water quality be equivalent to a source of pollution. In large lakes or reservoirs the water near the bottom of the impoundment will be considerably colder than the water near the surface and may be completely devoid of oxygen. If the turbine intakes draw water from near the bottom, the water discharged through the turbines may contain little or no dissolved oxygen.

Streams in this section receive an extensive pollution load made up of both domestic sewage and industrial waste. In many instances these discharges are resulting in conditions that seriously jeopardize the necessary uses which must be made of the receiving streams. The total sewage and waste load tributary to the streams, expressed as population equivalent (P.E.), is estimated to be 622,500 of which 597,000 is due to industrial waste discharges. The individual sources of pollution are discussed as follows:

Town of Henderson - The municipal sewerage system of Henderson serves an estimated population of 11,000 persons. The waste receives primary treatment before being discharged into Nutbush Creek. The effluent from this treatment plant produces septic conditions in Nutbush Creek that result in an odorous and unsightly stream, as well as contributing an enormous number of sewage (coliform) bacteria to the stream.

Town of Norlina - Even though the Town has no sewage collection system, nevertheless a sewage disposal problem exists. Several privately owned septic tanks, including the school, the Town Hall, one restaurant, one beauty shop, one drugstore and other commercial establishments, discharge effluents through a filter trench to a catch basin. The effluent from the catch basin flows into a ditch that empties into the drainage system of Ellington's Creek. This situation should be corrected.

Town of Littleton - This municipal sewerage system serves an estimated population of 1,250 persons. The system includes four small septic tanks that were built in 1922 and designed to serve a total population of approximately 300 persons. All four of these units are located on different streams; only two of these being in the Roanoke River Basin. Sewage from a population of approximately 150 persons is collected in two small septic tanks and discharged into West Littleton Branch and Bagley Academy Branch, both streams being tributary to Little Stonehouse Creek. Nuisance conditions exist in both of these branches particularly during hot - dry weather. The Town has employed engineers to study its sewage disposal problems.

McPherson Bottling Co. discharges an estimated 20,000 gallons of process wastes into a ditch that eventually drains into Little Stonehouse Creek. These wastes are primarily the wash waters from the bottle washing machine and have an estimated population equivalent of 2,800. Since they contain appreciable quantities of oxygen consuming material, their discharge into Little Stonehouse Creek will result in the lowering of the dissolved oxygen concentration in that stream.

Roanoke Rapids Reservoir - Even though no polluting material is discharged into the stream by Roanoke Rapids Reservoir, the dam, with its low level turbine intake structure, is the equivalent of a source of pollution. Water discharged through the turbines is low in dissolved oxygen and at times high in manganese and iron.

Roanoke Rapids Sanitary District - The Roanoke Rapids sewer system serves an estimated connected population of 9,000 persons as well as several of the industries in the area. The total pollutional load discharged by the Roanoke Rapids sewer is estimated to have a population equivalent of 18,320, of which an estimated 9,687 is attributable to domestic sewage and an estimated 8,633 is attributable to industrial waste. These wastes interfere with essential downstream uses.

Manchester Board and Paper Company discharges an estimated volume of 600,000 gallons per day of untreated industrial waste into the Roanoke River. This waste has an estimated population equivalent of 11,841 and interferes with essential downstream uses.

Roanoke Mills Plant #1 discharges an estimated volume of 275,000 gallons of untreated industrial waste into the Roanoke River daily. This waste, having an estimated population equivalent of 3,776 is highly colored and high in oxygen consuming materials and interferes with essential downstream uses.

Halifax Paper Company - The United States Public Health Service in cooperation with the State Stream Sanitation Committee studied the volume and characteristics of liquid waste from the Halifax Paper Company during August and September, 1953. Results from this study show that the Halifax Paper Company discharged an average of 17.3 millions of gallons of untreated industrial waste daily into the Roanoke River. The plant study also shows that during the period of study the waste contained 90,000 pounds of 5-day 20°C. B.O.D., or the equivalent of domestic sewage from a population of approximately 540,000 persons. These wastes, not only contain materials that are high in oxygen demand, but they also contain materials that are toxic to fish life when present in sufficient

concentrations. As yet these substances have not all been identified, nor has lethal concentrations, as they affect striped bass, been determined. These wastes seriously jeopardize the necessary downstream uses.

During early 1955 certain changes were made at the mill. A second study was made to determine volume and characteristics of the waste. Results of this study showed that the waste load had been reduced by 44% while pulp production had increased by 21%. This reduction in pollution load has not appreciably improved river conditions, due to the reduction of dissolved oxygen by upstream impoundments.

Town of Weldon - This municipal sewer system collects sewage from an estimated connected population of 2,400 persons. This waste is discharged without treatment into Smith Branch and Roanoke River.

Town of Halifax - This sewerage system serves an estimated population of 325 persons. The Town uses a septic tank for the treatment of the sewage before it is discharged into Quanky Creek. Primary treatment as provided is adequate for the population that is now being served provided it is properly operated and maintained. However, the treatment facility of the Town of Halifax was not being properly operated when visited by personnel of the State Stream Sanitation Committee on January 20, 1954.

Caledonia Prison Farm, Halifax County discharges the effluent from its sewage treatment plant to a ditch that drains into the Roanoke River. A cannery and a laundry are operated at the Camp. Wastes from these operations are discharged to the ditch without receiving any treatment. The population equivalent of these wastes is estimated to be 3,400.

Town of Jackson - This municipal sewerage system serves an estimated population of 750 persons. The system includes a treatment plant consisting of primary settling and intermittent sand filter. The effluent is discharged into Lilly Pon Creek. Treatment as provided is adequate if properly maintained and operated. However, when this plant was visited by personnel of the State Stream Sanitation Committee, it was found that the plant was not being properly operated and maintained.

Town of Rich Square - This municipal sewerage system serves an estimated population of 690 persons. The sewage receives primary treatment before being discharged into Bridgers Creek. When this plant was inspected by personnel of the State Stream Sanitation Committee, the sludge drying beds were not being used. At the time of inspection, November 5, 1953, it was evident that the Imhoff tank had been cleaned and the sludge dumped into a drainage ditch and allowed to drain into Bridgers Creek. The allowance of the sludge to drain into the Creek is in contravention of the purpose for which the treatment works were built. With proper operation and maintenance the waste treatment plant as now provided is adequate.

Town of Williamston - This municipal sewage collection system collects the sewage from an estimated population of 4,000 persons. The sewage is discharged without treatment through two outfall sewers into the Roanoke River. This waste lowers the dissolved oxygen content of the river as well as greatly increasing the bacterial count in the stream.

Atlas Plywood Co., Williamston Plant - Wastes from log steaming chambers are discharged to the storm sewer to the Roanoke River. These wastes are highly colored and have an estimated population equivalent of 4,800.

Williamston Packing Co. - Industrial wastes are discharged to a ditch which drains to Sweetwater Creek. These wastes have on occasion resulted in complaints from persons living near the ditch. The population equivalent of these wastes is estimated to be 730.

Town of Plymouth - This municipal sewage collection system collects sewage from an estimated population of 4,650 persons. This sewage is discharged without treatment into the Roanoke River and Conaby Creek. The outfalls that discharge into the Roanoke River serve an estimated population of 3,650 persons, while the outfalls that discharge into Conaby Creek serve an estimated population of 1,000. Nuisance conditions exist near the head of Conaby Creek during hot - dry weather.

North Carolina Pulp Company, Plymouth - This plant discharges an estimated volume of 40 MGD of untreated industrial waste into Welsh Creek and the Roanoke River. This waste contributes a five-day 20°C. B.O.D. load of 45,800 pounds, or a population equivalent of approximately 274,800. The waste discharged into Welsh Creek has a population equivalent of approximately 43,800, whereas the waste discharged directly into the Roanoke River has a population equivalent of approximately 231,000. These wastes, highly colored as well as high in oxygen consuming material, almost completely deplete the dissolved oxygen in the stream during periods of hot - dry weather. Not only are the wastes high in oxygen consuming material, but they contain substances that are toxic to fish life when present in sufficient concentrations. As yet these substances have not all been identified, nor have lethal concentrations been determined.

Atlas Plywood Co., Plymouth Plant discharges wastes from the log steaming pit to a ditch that drains to Roanoke River. These wastes are highly colored and have an estimated population equivalent of 1,400.

Town of Windsor - This municipal sewer system collects the sewage from an estimated population of 1,500 persons. The sewage is discharged without treatment through three outfall sewers into Cashie River. These wastes are of significance as they affect the receiving stream.

Potential Future Development

The area has excellent possibilities for industrial development. Such development will necessarily increase the need for suitable sources of water supply for domestic and industrial uses as well as suitable areas for recreational activities such as fishing and bathing. There will undoubtedly be an increase in the use of streams as sources of water for irrigation.

TABLE 3

PUBLIC GROUND WATER SUPPLIES

ROANOKE RIVER BASIN

Data Collected 1953-54

Community	Pop. 1950	Est. Pop. Served	Owner-ship	Estimated Consumption M.G.D.	No. of Wells	Est. Total Yield G.P.M.	Date Installed	Treatment
1. Danbury	--	250	P	0.025	Springs	0.025	1918	None
2. Halifax	350	350	M	0.015	2	0.086	1939	Filtration through coke gravel filter.
3. Jackson	850	800	M	0.072	3	0.011	--	None
4. Littleton	1,250	1,250	M	0.150	4	0.200	1922	None
5. Norlina	869	700	M	0.040	-	--	1948	None
6. Plymouth	4,800	4,000	M	0.120	2	0.864	1914	None
7. Rich Square	971	726	M	0.080	3	0.080	1936-39	None
8. Stoneville	786	825	M	0.040	2	0.166	1938-50	None
9. Walnut Cove	1,132	1,100	M	0.110	1	0.144	1928	None
10. Williamston	4,978	4,200	M	0.350	-	1.296	1919	None
11. Windsor	1,800	1,600	M	0.200	2	1.010	1920	None
12. Yanceyville (S.D.)*	1,391	1,050	SD	0.050	6	--	--	--

* 1/3 of Yanceyville's water supply is obtained from surface water.

TABLE 4

PUBLIC AND INDUSTRIAL SURFACE WATER SUPPLIES

ROANOKE RIVER BASIN

Community	Pop. 1950	Est. Pop. Served	Daily Avg. M.G.D. Used	Owner-ship	Source of Supply	Im-pounded	Date In-stalled	Design Capacity	Treatment Process
Draper		1,000	0.1	P	See Fieldcrest Mills				
Leaksville		4,500	0.55	M	Dan River		1922	2.0	Coag., sed., filtration, Cl_2
Madison	1,789	1,600	0.16	P	See Washington Mills				
Mayodan	2,246	2,500	0.25	P	See Washington Mills				
Roanoke Rapids (S.D.)	8,156	9,500	2.0	P	Roanoke River	Yes	1931	3.0	Coag., sed., filtration, Cl_2
Roxboro	5,500	15,000	1.0	M	Storys Creek	Yes	1924	3.0	Coag., sed., filtration, Cl_2
Spray	5,542	400	0.05	P	See Fieldcrest Mills				
Weldon	2,295	2,800	0.7	M	Roanoke River	Yes	1924	1.0	Pre Cl_2, coag., sed., filtration, post Cl_2
Yanceyville (S.D.)	1,391	1,050	0.025	S.D.	Fullers Creek	Yes	1953	0.25	Coag., sed., filtration, Cl_2
Private Industrial									
Fieldcrest Mills			2.9	P	Smith River				Coag., sed., filtration, Cl_2
Halifax Paper Co.			20.0	P	Roanoke River	No			Coag., sed., filtration
Manchester Board & Paper Co.			0.72	P	Roanoke River	No			
N. C. Pulp Co.			40.0	P	Roanoke River	No			Coag., sed., filtration
Washington Mills			0.25	P	Mayo River	No			Coag., sed., filtration, Cl_2

TABLE 5

POINTS OF SIGNIFICANT SOURCES OF POLLUTION

ROANOKE RIVER BASIN

Data Collected 1953-54

Location	Pop. 1950	Est. Pop. Served	Ownership	Kind of Waste	Est. Gals. Waste M.G.D.	Type of Treatment	Design Capacity M.G.D.	P. E. Before Treatment	P. E. After Treatment	Receiving Stream
Draper		800	M	D.S.	0.064	None		800	800	Dan River
Fieldcrest Mills (Sheeting)		650	P	D.S., I.W.	0.02	None		700	700	Dan River
Fieldcrest Mills (Blankets)		725	P	D.S., I.W.	0.3	None		1,000	1,000	Dan River
Halifax	350	350	M	D.S.	0.015	Primary		350	240	Quanky Creek
Caledonia Prison Farm	200	200	State	I.W.	0.086	None		3,400	3,400	Conoconnara Creek
Henderson	10,996	11,000	M	D.S.	1.25	Primary	2.0	11,000	7,700	Nutbush Creek
Jackson	850	750	M	D.S.	0.065	Complete	0.09	750	380	Lilly Pond Branch
Jamesville		400	State	D.S.	0.006	None		400	400	Roanoke River
Leaksville	4,045	5,080	M	D.S.	0.40	None		5,080	5,080	Dan River
Fieldcrest Mills (Kranstan)		450	P	D.S., I.W.	0.6	None		25,000	25,000	Dan River
Fieldcrest Mills (Bedspreads)		245	P	D.S., I.W.	0.24	None		1,200	1,200	Dan River
Littleton	1,250	130	M	D.S.	0.008	Primary		130	110	Little Stonehouse Creek
McPherson Bottling Co.			P	I.W.	0.02	None		2,800	2,800	Ditch to L. Stonehouse Creek
Madison	1,789	1,200	M	D.S.	0.12	Primary		1,200	900	Dan River
Mayodan	2,500	2,000	M	D.S.	0.16	Intermediate	0.2	2,000	800	Mayo River
Washington Mills			P	I.W.	0.04	None		2,400	2,400	Mayo River
Plymouth	4,800	4,650	M	D.S.	0.12	None		4,650	4,650	Conaby Creek and Roanoke River
Atlas Plywood			P	I.W.	0.029	None		1,400	1,400	Roanoke River
N. C. Pulp Co.			P	I.W.	40.0	None		270,000	270,000	Roanoke River

TABLE 5

POINTS OF SIGNIFICANT SOURCES OF POLLUTION

ROANOKE RIVER BASIN

Data Collected 1953-54

Location	Pop. 1950	Est. Pop. Served	Ownership	Kind of Waste	Est. Gals. Waste M.G.D.	Type of Treatment	Design Capacity M.G.D.	P. E. Before Treatment	P. E. After Treatment	Receiving Stream
Rich Square	971	690	M	D.S.	0.076	Primary	0.14	690	490	Bridgers Creek
Roanoke Rapids S.D.	8,156	9,000	S.D.	D.S., I.W.	1.7	None		17,300	17,300	Roanoke River
Roanoke Mills #1			P	I.W.	0.3	None		4,400	4,400	Roanoke River
Manchester Board & Paper Co.			P	I.W.	0.85	None		12,000	12,000	Roanoke River
Halifax Paper Co.			P	I.W.	15.0	None		295,000	295,000	Roanoke River
Roxboro	5,500	6,250	M	D.S.	0.42	None		6,250	6,250	Marlowe Creek
Collins & Ackman			P	I.W.	0.57	None		4,000	4,000	Marlowe Creek
W. V. Laws Poultry Co.			P	I.W.	0.015	Primary		520	390	Marlowe Creek
Reidsville	11,708	500	M	D.S.	0.04	Primary		500	400	Jones Creek
		3,500	M	D.S.	0.3	Primary	0.4	3,500	2,450	Wolf Island Creek
Spray	2,295	5,000	M	D.S.	0.5	None		5,000	5,000	Smith River
Fieldcrest Mills(Electric Blankets)		730	P	D.S.	0.03	None		730	730	Smith River
Fieldcrest Mills(Bleach & Finish)		530	P	D.S., I.W.	1.25	None		8,300	8,300	Smith River
Fieldcrest Mills(Rayon Mill)		315	P	D.S., I.W.	0.1	None		330	330	Smith River
Leaksville Woolen Mills, Inc.		140	P	D.S., I.W.	0.03	None		500	500	Smith River
Stoneville	786	265	M	D.S.	0.008	Primary	0.052	265	185	Br. to Mayo River
		185	M	D.S.	0.006	Primary	0.022	185	130	Br. to Boaz Creek
		80	M	D.S.	0.003	Primary	0.01	80	60	Br. to Buffalo Cr.
Walnut Cove	1,132	1,100	M	D.S.	0.011	None		1,100	1,100	Town Fork Creek

TABLE 5

POINTS OF SIGNIFICANT SOURCES OF POLLUTION

ROANOKE RIVER BASIN

Data Collected 1953-54

Location	Pop. 1950	Est. Pop. Served	Ownership	Kind of Waste	Est. Gals. Waste M.G.D.	Type of Treatment	Design Capacity M.G.D.	P. E. Before Treatment	P. E. After Treatment	Receiving Stream
Williamston	4,978	4,000	M	D.S.	0.13	None		4,000	4,000	Roanoke River
Williamston Packing Co.				I.W.	0.093	None		730	730	Ditch to Sweetwater Creek
Atlas Plywood Co.				I.W.	0.096	None		4,800	4,800	Roanoke River
Weldon	2,295	2,400	M	D.S.	0.24	None		2,400	2,400	Roanoke River
Coco Cola Bottling Co.				I.W.	0.03	None		220	220	Roanoke River
Windsor	1,800	1,500	M	D.S.	0.29	None		1,500	1,500	Cashie River
Yanceyville (S.D.)	1,391	700	M	D.S.	0.053	Primary	0.06	800	490	Jail Branch

TABLE 6

ANALYTICAL RESULTS

ROANOKE RIVER BASIN

STATION NO. 1-A

Collected Date 1953	Time	Discharge cfs	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-11	1025	4,300	28	7.3	56	6	39	0.1	1	2.1	61,900	3,000
8-12	0830	4,300		7.0	68	5	52	1.6		1.9	55,100	2,400
8-18	0705	4,300	26	7.1	45	7	56	1.1	13	1.9	55,100	430
8-25	1210	4,300	27	7.0	55	3	42	0.7	9	2.1	58,100	240
9-3	1400	4,200	29	7.0	57	37	66	2.3	30	2.0	56,700	1,500
9-10	1630	3,100	25	7.2	66	10	66	2.4	29	1.5	31,400	430
9-30	1215	5,000	25	7.0	51	6	60	2.5	30	1.9	64,100	430
10-20	1350	2,500	25	7.5	62	110	120	5.5	66	3.7	62,400	<230*
10-28	1125	2,400	19	7.3	58	80	96	5.4	58	1.8	29,200	93
Avg.		3,800	26		58	29	66	2.4	29	2.1	52,600	1,100

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-11	1025	37	130	<10	0.30	0.03	0.070	116	12	104
8-12	0830	40	130	<10	0.30	0.04	0.060	110	6	104
8-18	0705	30	145	<10	0.20	0.15	0.010	113	12	101
8-25	1210	30	130	<10	0.20	0.13	0.020	111	8	103
9-3	1400	32	105	<10	0.30	0.03	0.010	172	8	164
9-10	1630	50	205	<10	0.30	0.12	0.020	124	27	97
9-30	1215	30	195	10.1	0.20	0.20	0.050	129	32	97
10-20	1350	20	80	<10	0.30	0.05	0.020	286	2	284
10-28	1125	32	130	<10	0.20	0.13	0.330	248	15	233
Avg.		33	139		0.26	0.10	0.066	157	14	143

* Excluded from average

TABLE 6

ANALYTICAL RESULTS

STATION NO. 1-B

Collected Date 1953	Time	Discharge cfs	Temp. °C	pH	Alk.	Cl^-	Hardness	D_2O_2	% D_2O_2 Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-11	1100	4,300	28	7.3	62	6	42	0.1	1	1.7	49,400	2,400
8-12	0855	4,300		7.0	50	6	54	0.1		2.3	66,800	2,400
8-18	0645	4,300	26	7.1	48	15	56	0.7	9	1.4	40,600	4,600
8-25	1220	4,100	27	7.0	55	3	52	0.7	9	2.3	65,600	430
9-3	1415	4,200	29	7.0	58	7	64	1.4	18	2.7	76,600	2,400
9-10	1615	3,100	25	7.2	58	6	66	2.5	30	2.5	52,300	230
9-30	1200	5,000	25	7.0	61	5	84	6.8	81	1.1	37,100	
Avg.		4,185	27		56	7	60	1.8	25	2.0	55,200	2,100

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-11	1100	16	130	< 10	0.30	0.01	0.060	121	2	119
8-12	0855	23	105	< 10	0.30	0.04	0.060	111	2	109
8-18	0645	27	155	< 10	0.30	0.19	0.010	127	11	116
8-25	1220	23	95	< 10	0.20	0.19	0.010	108	8	100
9-3	1415	14	105	< 10	0.25	0.09	0.020	109	0	109
9-10	1615	32	170	< 10	0.20	0.08	0.020	133	26	107
9-30	1200	20	145	< 10	0.25	0.14	0.010	143	15	128
Avg.		22	129		0.26	0.11	0.027	122	9	113

TABLE 6

ANALYTICAL RESULTS

STATION NO. 1-C

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D. O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-11	1125	4,300	28	7.3	59	4	41	2.7	34	1.7	49,400	150
8-12	0915	4,300		7.2	57	3	54	3.7		1.4	40,600	240
8-18	0625	4,300	26	7.1	46	6	58	2.5	30	1.2	34,800	2,400
8-25	1230	4,100	28	7.0	54	2	52	4.1	52	2.5	66,400	93
9-3	1430	4,200	29	7.1	58	6	66	5.4	69	2.1	59,600	230
9-10	0600	3,100	25	7.2	56	13	96	5.3	63	2.2	45,900	430
9-30	1155	5,000	25	7.7	58	6	72	4.5	54	1.9	64,000	930
Avg.		4,185	27		56	7	63	4.0	50	1.8	51,500	600

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-11	1125	18	70	<10	0.30	0.04	0.060	101	1	100
8-12	0915	25	120	<10	0.20	0.03	0.020	102	4	98
8-18	0625	27	130	<10	0.20	0.24	0.010	106	10	96
8-25	1230	27	120	<10	0.00	0.10	.0	113	11	102
9-3	1430	32	120	<10	0.30	0.08	0.020	105	14	91
9-10	1600	62	295	<10	0.20	0.13	0.020	171	62	109
9-30	1155	16	145	11.4	0.30	0.05	0.100	116	9	107
Avg.		30	143		0.21	0.10	0.033	116	16	100

TABLE 6

ANALYTICAL RESULTS

STATION NO. 1-D

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-18	0700	4,300	26	7.1	42	8.48	56	1.2	15	1.8	52,500	2,400

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-18	0700	32	170	<10	0.35	0.19	0.017	107	1	106

STATION NO. 1-E

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-18	0650	4,300	26	7.1	50	15.15	56	0.7	9	1.7	49,400	430

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-18	0650	27	195	<10	0.35	0.19	0.017	127	1	126

TABLE 6

ANALYTICAL RESULTS

STATION NO. 1-F

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-18	0630	4,300	26	7.1	46	6.06	52	2.6	32	1.2	34,800	430

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-18	0630	32	170	13.1	0.00	0.10	0	110	17	93

STATION NO. 1-G

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-25	1300	4,100	28	8.0	50	14	64	2.8	35	4.0	110,700	43
9-3	1500	4,200	28	7.2	45	374	196	7.1	90	1.3	36,800	43
Avg.		4,150	28		47	194	130	5.0	63	2.6	73,800	43

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-25	1300	45	170		0.30	0.07	0.030	135	11	124
9-3	1500	16	66	39.3	0.20	0.08	0.020	836	2	834
Avg.		30	118	39.3	0.25	0.08	0.025	485	6	479

TABLE 6

ANALYTICAL RESULTS

STATION NO. 1-H

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-25	1310	4,100	28	7.3	52	363	58	6.4	81	2.3	63,600	43
9-3	1515	4,200	28	7.2	47	318	126	5.8	73	1.8	51,200	930
Avg.			28		49	341	92	6.1	77	2.0	57,400	486

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-25	1310	25	170	10.2	0.20	0.10	.0	104	1	103
9-3	1515	18	80	<10	0.20	0.10	0.020	498	1	497
Avg.		21	125		0.20	0.10	0.020	301	1	300

STATION NO. 1-I

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-25	1316	4,100	28	7.5	49	7	56	6.5	82	2.2	60,700	43
9-3	1530	4,200	28	7.2	52	136	80	5.8	73	1.9	53,800	430
Avg.			28		51	72	68	6.2	78	2.0	57,300	236

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-25	1316	40	145	<10	0.30	0.13	0.020	122	14	108
9-3	1530	23	105	<10	0.10	0.00	0.010	211	6	205
Avg.		31	125		0.20	0.06	0.015	166	10	156

TABLE 6

ANALYTICAL RESULTS

STATION NO. 2

Collected Date 1953	Loc.	Time	Temp. °C	pH	Alk.	Cl^-	Hard-ness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C.	B. O. D. Average 5 Day	Coliform M.P.N. per 100 ml.
	RT	1145	26	7.1	51	5	48	1.5	18	1.5		2,400
8-19 =	RB	1155	25	7.3	50	5	54	1.6	19	2.1	2.2	9,300
	LT	1205	26	7.1	50	5	52	1.7	21	3.1		2,100
	LB	1210	25	7.1	49	5	42	1.5	18	2.2		930
	RT	0640	26	7.2	61	13	58	1.5	18	>5.7*		9,300
8-27 =	RB	0645	24	7.2	52	11	50	3.2	38	3.0	2.9	1,500
	LT	0643	26	7.4	67	13	50	3.2	39	>7.5*		930
	LB	0652	24	7.1	49	8	50	3.7	43	2.8		930
	RT	1905	29	7.4	59	10	54	3.2	41			24,000
8-31 =	RB	1909	27	7.5	56	8	56	3.4	42			4,300
	LT	1910	29	7.4	60	14	44	3.7	48			2,400
	LB	1914	27	7.5	57	6	48	3.7	46			930
	RT	1645	28	7.3	65	5	96	2.1	27	2.3		1,500
9-9 =	RB	1650	28	7.3	61	5	92	1.0	13	2.5	2.6	2,400
	LT	1655	28	7.3	66	7	88	3.2	40	3.1		930
	LB	1700	28	7.3	61	6	80	2.0	25	2.6		9,300
	RT	1620	27	7.3	68	9	98	2.1	26	7.6		46,000
9-15 =	RB	1625	26	7.3	63	6	88	2.1	26	1.6	5.2	
	LT	1630	27	7.3	83	11	64	2.5	31	8.4		9,300
	LB	1635	26	7.3	60	5	66	2.5	30	3.0		24,000
	RT	1305	26	7.1	70	7	46	0.4	5	8.3		4,300
9-17 =	RB	1308	25	7.0	60	6	48	0.8	10	5.0	6.4	2,400
	LT	1300	26	7.1	62	8	44	0.5	6	5.8		4,300
	LB	1303	25	7.1	62	7	44	0.6	7	>5.6*		4,300
	RT	1210	25	7.3	62	7	80	3.0	36	2.4		4,300
9-22 =	RB	1215	25	7.3	62	7	138	3.1	37	2.3	2.0	4,300
	LT	1200	25	7.3	63	6	72	3.0	36	1.4		9,300
	LB	1205	25	7.3	61	7	62	2.8	33	1.8		4,300
	RT	1315	27	7.2	59	8	102	3.3	41	6.2		9,300
9-30 =	RB	1320	24	7.0	59	7	74	3.4	40	2.4	4.6	9,300
	LT	1305	27	7.4	65	8	82	6.9	86	7.4		3,900

* Excluded from average

TABLE 6

ANALYTICAL RESULTS

STATION NO. 2 -(Continued)

Collected Date 1953	Loc.	Time	Temp. °C	pH	Alk.	Cl^-	Hard-ness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	Coliform M.P.N. per 100 ml.
9-30 =	(LB	1310	24	7.1	58	7	114	3.5	41	2.5)		2,300
	(RT	1235	22	7.4	69	12	84	2.5	28	12.0)		9,300
10-20 =	(RB	1240	22	7.3	68	10	78	2.9	33	7.8)		9,300
	(LT	1245	22	7.5	70	11	78	3.4	39	9.7) =	8.9	9,300
	(LB	1250	22	7.5	64	8	84	3.9	44	6.2)		4,300
	(RT	1445	21	7.2	66	12	52	3.1	34			7,500
10-27 =	(RB	1450	20	7.2	64	10	78	3.3	36			2,300
	(LT	1430	21	7.2	67	12	52	3.7	41			46,000
	(LB	1435	20	7.1	66	10	50	3.7	40			4,300
	(RT	1400	20	7.1	65	7	70	2.3	25	4.2)		9,300
10-28 =	(RB	1400	20	7.1	64	7	66	1.6	17	3.0) =	3.8	7,300
	(LT	1410	20	7.2	64	8	74	1.7	19	5.5)		2,300
	(LB	1410	20	7.1	65	7	72	1.6	17	2.5)		9,300
Avg.			25		62	8	69	2.6	31	4.3	4.3	7,600

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(RT	1145	18	130	<10	0.20	0.02	0.020	140	8	132
8-19 =	(RB	1155	54	155	<10	0.30	0.13	0.020	151	12	139
	(LT	1205	50	205	<10	0.20	0.03	0.020	124	23	101
	(LB	1210	30	170	<10	0.30	0.50	0.030	71	37	34
	(RT	0640	23	195	11.3	1.00	0.17	0.030	146	22	124
8-27 =	(RB	0645	46	65		0.30	0.08	0.030	1,475	21	1,454
	(LT	0643	14	180	12.5	0.30	0.14	0.010	145	33	112
	(LB	0652	57	180	<10	0.20	0.05	0.050	122	16	106
8-31 =	(RT	1905	27	130	<10	0.20	0.06	0.010	125	12	113
	(RB	1909	32	145	<10	0.30	0.08	0.020	124	19	105

TABLE 6

ANALYTICAL RESULTS

STATION NO. 2 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Suspended	Dissolved
8-31 =	(LT	1910	37	155	11.8	0.30	0.14	0.010	126	18	108
	(LB	1914	35	155	<10	0.10	0.09	0.010	113	23	90
	(RT	1645	32	155	<10	0.00	0.13	0.020	136	3	133
9-9 =	(RB	1650	51	170	<10	0.30	0.13	0.030		20	
	(LT	1655	32	205	<10	0.25	0.10	0.020	130	30	100
	(LB	1700	35	180	<10	0.20	0.02	0.030	136	33	103
	(RT	1620	30	120	<10	0.20	0.15	0.020	140	18	122
9-15 =	(RB	1625	30	170	<10	0.20	0.15	0.010	141	31	110
	(LT	1630	27	195	<10	0.20	0.19	0.010	151	18	133
	(LB	1635	27	220	<10	0.20	0.33	0.025	146	36	110
	(RT	1305	50	145	10.1	0.20	0.14	0.020	132	18	114
9-17 =	(RB	1308	65	205	<10	0.40	0.20	0.010	145	37	108
	(LT	1300	37	155	<10	0.20	0.12	0.020	137	15	122
	(LB	1303	30	180	<10	0.30	0.13	0.030	153	29	124
	(RT	1210	40	155	<10	0.25	0.35	0.020	110	20	90
9-22 =	(RB	1215	56	170	<10	0.30	0.13	0.010	372	33	339
	(LT	1200	35	145	<10	0.30	0.14	0.010	118	3	115
	(LB	1205	57	195	<10	0.30	0.15	0.020	143	17	126
	(RT	1315	37	130	<10	0.20	0.07	0.030	142	27	115
9-30 =	(RB	1320	42	145	<10	0.10	0.03	0.020	126	20	106
	(LT	1305	35	145	<10	0.30	0.05	0.150	141	24	117
	(LB	1310	16	230	<10	0.20	0.25	0.030	134	51	83
	(RT	1235	20	130	<10	0.30	0.05	0.050	182	1	181
10-20 =	(RB	1240	27	120	16.4	0.30	0.10	0.050	152	15	137
	(LT	1245	27	120	<10	0.30	0.05	0.050	157	12	145
	(LB	1250	32	105	<10	0.30	0.05	0.050	149	8	141
	(RT	1445	18	120	<10	0.20	0.08	0.020	130	16	114
10-27 =	(RB	1450	48	95	<10	0.20	0.10	0.040	131	68	63
	(LT	1430	35	130	<10	0.30	0.10	0.040	119	24	98
	(LB	1435	35	170	<10	0.30	0.05	0.100	149	37	112

TABLE 6

ANALYTICAL RESULTS

STATION NO. 2 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-28	(RT	1400	23	105	<10	0.10	0.10	0.050	120	3	117
	(RB	1400	32	155	<10	0.30	0.10	0.040	135	16	119
	(LT	1410	48	105	<10	0.10	0.09	0.010	157	48	109
	(LB	1410	32	145	<10	0.20	0.06	0.040	131	30	101
Avg.			36	154		0.25	0.12	0.030	173	25	168

STATION NO. 3

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-12	1335			7.4	68	6	50	2.8		7.4		>11,000*
8-13	0730		27	7.1	54	5	50	3.9	48	2.9		4,600
8-19	1135		26	7.3	50	5	52	2.4	29	2.9		1,500
8-27	0625		24	7.2	52	4	54	4.3	50	3.2		930
8-31	1855		27	7.5	55	2	50	4.0	50	1.2		4,300
9-9	1630		27	7.3	67	8	80	0.7	9	>5.4*		2,300
9-15	1600		27	7.4	70	12	48	3.1	38	>7.1*		2,400
9-17	1325		27	7.2	61	7	46	1.7	21	>6.7*		2,400
9-22	1220		25	7.3	69	10	76	0.9	11	11.8		9,300
9-30	1030		25	7.2	57	9	94	3.9	47	8.3		910
10-20	1201		20	7.9	75	12	88	3.5	38	21.5		1,500
10-27	1401		21	7.2	68	13	72	2.3	26			1,500
10-28	1430		21	7.1	62	10	88	2.4	26	10.0		2,100
Avg.			25		62	8	65	2.8	33	7.4		2,800

* Excluded from average

TABLE 6

ANALYTICAL RESULTS

STATION NO. 3 - (Continued)

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-12	1335	65	205	<10	0.20	0.02	0.030	130	18	112
8-13	0730	51	145	<10	0.10	0.02	0.030	96	11	85
8-19	1135	27	180	<10	0.40	0.23	0.020	114	15	99
8-27	0625	20	95	<10	0.20	0.12	0.020	116	17	99
8-31	1855	23	130	<10	0.20	0.05	0.010	126	16	110
9-9	1630	45	230	<10	0.20	0.17	0.030	161	41	120
9-15	1600	35	170	<10	0.20	0.08	0.020	157	20	137
9-17	1325	54	220	<10	0.35	0.08	0.020	149	28	121
9-22	1220	27	195	<10	0.35	0.18	0.020	149	17	132
9-30	1030	27	130	10.0	0.20	0.08	0.020	133	17	116
10-20	1201	40	170	<10	0.40	0.05	0.050	185	1	184
10-27	1410	32	120	<10	0.30	0.17	0.030	145	18	127
10-28	1430	20	120	<10	0.30	0.06	0.040	146	16	130
Avg.		36	162		0.26	0.10	0.026	139	18	121

STATION NO. 4

Collected Date 1953	Loc.	Time	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C.	B. O. D. Average 5 Day	Coliform M.P.N. per 100 ml.
	(RT	1030	27	7.1	54	9	52	2.5	31	11.0)		24,000
	(RB	1035	26	7.1	50	5	48	2.4	29	8.2)		93,000
8-19	=(MT	1105	29	7.4	86	16	58	2.8	36	6.7)	= 7.5	9,300
	(MB	1100	26	7.4	53	5	48	2.8	34	7.3)		2,300
	(LT	1050	28	7.1	51	11	50	3.3	42	10.0)		93,000
	(LB	1055	26	7.4	51	4	48	3.0	36	1.6)		9,300

TABLE 6

ANALYTICAL RESULTS

STATION NO. 4 (Continued)

Collected Date 1953	Loc.	Time	Temp. °C	pH	Alk.	Cl^-	Hard-ness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	Coliform M.P.N. per 100 ml.
	(RT	0525	27	7.2	65	6	54	3.5	43	>27*)		910
	(RB	0530	24	7.2	51	6	58	4.7	55	4.9)		360
8-27 =	(MT	0540	27	7.6	65	9	52	4.7	58	26.0)	= 10.1	<36
	(MB	0545	24	7.2	53	7	52	4.6	54	3.5)		>36
	(LT	0555	27	7.3	58	12	54	4.3	53	14.0)		300
	(LB	0600	24	7.1	53	6	48	4.6	54	2.3)		<36
	(RT	1820	30	7.6	69	18	60	3.6	47			4,300
	(RB	1824	28	7.6	57	18	52	4.2	52			360
8-31 =	(MT	1827	31	7.6	80	26	78	4.3	57			910
	(MB	1830	27	7.6	58	7	58	3.6	45			360
	(LT	1833	31	7.9	85	9	60	5.5	73			1,500
	(LB	1837	27	7.7	61	6	54	3.9	48			2,100
	(RT	1600	28	7.5	69	5	90	0.4	5	11.3)		4,300
	(RB	1602	28	7.4	69	8	68	0.3	4	12.0)		4,300
9-9 =	(MT	1605	30	7.6	74	9	86	0.0	0	11.0)	= 155.7	24,000
	(MB	1607	28	7.8	77	6	88	0.0	0	714.0)		2,400
	(LT	1610	28	8.2	84	2	86	0.0		30.6)		930
	(LB	1615	28	8.0	77	2	72	0.1	1	>13*)		1,500
	(RT	1520	29	8.0	87	23	86	2.8	36	38.2)		1,500
	(RB	1525	27	7.4	63	7	82	3.3	41	5.3)		2,300
9-15 =	(MT	1530	30	7.7	75	18	64	1.5	20	31.0)	= 22.7	4,300
	(MB	1535	27	7.4	67	7	88	2.2	27	19.0)		
	(LT	1540	28	7.7	66	10	66	4.7	59	37.0)		2,100
	(LB	1545	26	7.4	66	5	64	3.5	43	6.1)		2,300

* Excluded from average

TABLE 6

ANALYTICAL RESULTS

STATION NO. 4 - (Continued)

Collected Date 1953	Loc.	Time	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	Coliform M.P.N. per 100 ml.
	(RT	1305	27	7.2	63	6	46	1.9	24	25.0)		4,300
	(RB	1337	26	7.2	66	10	46	3.6	44	9.6)		720
9-17	=(MT	1340	30	7.3	67	16	46	0.8	10	3.4)=	14.6	15,000
	(MB	1343	28	7.0	57	9	46	2.1	27	19.0)		2,400
	(LT	1350	27	7.3	68	11	46	3.6	45	27.0)		430
	(LB	1353	26	7.4	57	5	46	4.6	56	3.8)		4,300
	(RT	1225	25	7.4	79	10	102	1.0	12	>49*)		430
	(RB	1227	25	7.5	69	7	74	2.6	31	>13*)		2,400
9-22	=(MT	1235	25	7.5	81	9	70	0.9	11	54.0)=	26.9	930
	(MB	1240	25	7.4	68	7	116	2.8	33	15.0)		2,400
	(LT	1255	25	7.4	76	10	102	4.4	53	34.0)		930
	(LB	1310	24	7.4	61	7	94	4.2	49	4.8)		230
	(RT	0940	27	7.0	80	20	174	4.4	55	26.0)		1,500
	(RB	0945	25	7.3	50	7	114	4.7	56	4.3)		910
9-30	=(MT	0950	27	7.4	68	15	142	4.5	56	24.0)=	13.1	24,000
	(MB	0955	24	7.2	57	11	156	4.5	53	4.6)		910
	(LT	1000	25	7.3	65	14	60	4.9	58	18.0)		1,600
	(LB	1005	24	7.1	59	5	68	4.8	56	1.8)		2,400
Avg.			27		65	10	72	3.1	38	33.8	35.8	7,600

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(RT	1030	35	130	<10	0.80	0.10	0.100	158	12	146
	(RB	1035	43	195	<10				126	43	83
8-19	=(MT	1105	20	290	<10	0.70	0.05	0.010	268	20	248
	(MB	1100	35	155	<10	0.20	0.19	0.010	112	16	96
	(LT	1050	30	120	<10	0.20	0.12	0.010	105	12	93
	(LB	1055	25	130	<10	0.30	0.18	0.020	104	5	99

* Excluded from average

TABLE 6

ANALYTICAL RESULTS

STATION NO. 4 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(RT	0525	23	255	<10	0.30	0.18	0.020	176	13	163
	(RB	0530	37	155	<10	0.20	0.07	0.030	114	31	83
8-27	=(MT	0540	45	56	<10	0.40	0.20	0.010	169	15	154
	(MB	0545	32	170	<10	0.00	0.20	0.010	102	25	77
	(LT	0555	37	245	<10	0.50	0.25	0.010	151	17	134
	(LB	0600	27	170	<10	0.20	0.05	0.050	115	16	99
	(RT	1820	35	245	<10	0.30	0.28	0.020	186	12	174
	(RB	1824	30	180	<10	0.20	0.08	0.025	126	7	119
8-31	=(MT	1827	35	305	<10	0.30	0.20	0.010	220	17	203
	(MB	1830	63	305	<10	0.20	0.05	0.010	131	49	82
	(LT	1833	40	320	<10	0.50	0.14	0.010	230	12	218
	(LB	1837	27	195	<10	0.40	0.14	0.020	128	20	108
	(RT	1600	30	245	<10	0.20	0.10	0.000	151	26	125
	(RB	1602	56	360	<10	0.25	0.24	0.010	219	84	135
9-9	=(MT	1605	35	205	<10	0.40	0.22	0.020	163	14	149
	(MB	1607	18	225	<10	0.40	0.09	0.010	175	7	168
	(LT	1610	45	280	<10	0.40	0.28	0.010	193	22	171
	(LB	1615	35	230	<10	0.40	0.18	0.010	205	25	180
	(RT	1520	35	220	<10	0.40	0.19	0.010	221	19	202
	(RB	1525	32	170	<10	0.20	0.09	0.010	128	10	118
9-15	=(MT	1530	30	205	<10	0.30	0.20	0.010	178	12	166
	(MB	1535		1,360					643	576	67
	(LT	1540	48	145	13.6	0.20	0.16	0.010	130	19	111
	(LB	1545	35	170	<10	0.20	0.07	0.030	121	17	104
	(RT	1305	35	240	<10	0.40	0.24	0.010	158	19	139
	(RB	1337	35	205	<10	0.20	0.17	0.030	149	26	123
9-17	=(MT	1340	45	220	<10	0.30	0.24	0.010	185	33	152
	(MB	1343	70	360	<10	0.30	0.14	0.010	241	127	114
	(LT	1350	60	170	<10	0.40	0.20	0.020	159	18	139
	(LB	1353	60	130	<10	0.30	0.15	0.020	122	14	108

TABLE 6

ANALYTICAL RESULTS

STATION NO. 4 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(RT	1225	35	245	<10	0.40	0.15	0.025	180	10	170
	(RB	1227	43	195	<10	0.50	0.17	0.010	153	30	123
9-22	=(MT	1235	42	220	10.4	0.40	0.24	0.010	188	20	168
	(MB	1240	45	195	13.4	0.30	0.17	0.010	149	40	109
	(LT	1255	30	230	<10	0.50	0.22	0.020	169	20	149
	(LB	1310	22	155	<10	0.40	0.14	0.010	114	15	99
	(RT	0940	35	230	<10	0.30	0.03	0.025	161	30	131
	(RB	0945	42	120	<10	0.30	0.05	0.150	124	20	104
9-30	=(MT	0950	35	205	<10	0.30	0.10	0.050	175	21	154
	(MB	0955	70	240	<10	0.25	0.14	0.010	149	61	88
	(LT	1000	32	180	<10	0.60	0.05	0.150	171	23	148
	(LB	1005	30	120	<10	0.25	0.14	0.010	136	17	119
Avg.			38	231		0.33	0.15	0.024	169	36	134

Collected Date 1954	Loc.	Time	Discharge cfs	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
	(RT	1310		10	7.1	34	5	41	8.8	78	7.4			1,500
3-10	=(MT	1315	6,200	9	7.1	32	5	42	9.2	80	1.7	3.4	142,000	930
	(LT	1320		9	7.1	33	4	38	9.0	78	1.0			930
	(RT	1130		30	7.2	44	13	82	0.8	11	38.1			
	(RB	1132		28	7.0	36	8	80	2.4	30	8.9			
6-23	=(MT	1138	2,900	29	7.3	42	12	86	1.6	20	14.5	28.1	55,000	
	(MB	1136		28	7.1	41	7	52	3.1	39	9.7			
	(LT	1140		30	7.4	54	13	42	0.8	11	92.0			
	(LB	1140		28	6.8	32	7	44	3.3	42	5.3			
Avg.				22		39	8	56	4.3		19.8			1,100

TABLE 6

ANALYTICAL RESULTS

STATION NO. 5

Collected Date 1953	Collected Time	Discharge cfs	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-12	1315			7.4	55	3	58	5.0		1.9		2,400
8-13	0700		26	7.2	54	3	52	4.5	55	1.7		2,400
8-19	1020		26	7.1	54	3	48	3.5	43	1.9		150
8-27	0515		24	7.2	51	6	58	5.1	60	0.9		230
8-31	1810		27	7.7	57	4	52	4.5	56			730
9-9	1550		31	8.9	102	8	84	3.5	47	6.9		2,400
9-15	1500		25	7.4	60	2	56	3.5	42	2.7		910
9-17	1400		26	7.4	65	3	44	4.7	57	2.5		930
9-22	1320		24	7.2	61	5	124	4.8	56	1.5		430
9-30	0930		23	7.3	57	4	102	5.2	60	1.0		730
10-20	1100		20	7.5	65	4	98	5.7	62	2.7		
10-27	1315		20	7.2	62	8	58	5.6	61			930
10-28	1445		20	7.1	62	5	64	4.4	48	3.1		430
Avg.			24		62	4	69	4.6	54	2.4		1,100

TABLE 6

ANALYTICAL RESULTS

STATION NO. 5 - (Continued)

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-12	1315	37	130	<10	0.20	0.02	0.030	104	12	92
8-13	0700	45	145	<10	0.10	0.02	0.025	109	10	99
8-19	1020	25	120	<10	0.20	0.13	0.012	93	11	82
8-27	0815	27	155	<10	0.20	0.07	0.030	106	21	85
8-31	1810	35	80	<10	0.20	0.07	0.030	1,784	20	1,764
9-9	1550	30	440	<10	0.60	0.19	0.010	306	26	280
9-15	1500	12	120	<10	0.30	0.17	0.030	114	7	107
9-17	1400	18	130	<10	0.30	0.17	0.025	111	1	110
9-22	1320	25	145	<10	0.20	0.20	0.010	89	7	82
9-30	0930	25	130	<10	0.20	0.18	0.010	121	13	108
10-20	1100	32	80	11.6	0.25	0.07	0.030	114	8	106
10-27	1315	25	65	<10	0.30	0.07	0.035	100	22	87
10-28	1445	23	65	<10	0.30	0.06	0.040	109	9	110
Avg		28	139		0.26	0.11	0.024	252	13	239

Collected Date 1954	Time	Discharge cfs	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
3-10	1330	6,200	9	7.1	34	1	41	9.2	80	0.9	37,700	150
3-12	1040	4,200	10	6.9	29	4	42	8.7	77			
6-23	1635	2,900	28	7.1	40	6	60	4.1	52	2.1	41,100	230
7-6	1115	3,000	29	7.4	45	3	39	5.2	67	0.8	16,200	930
7-8	0920	3,000	30	7.5	43	4	55	6.0	78	1.3	26,300	
Avg.		4,000	21		38	4	47	6.6		1.3	30,000	440

TABLE 6

ANALYTICAL RESULTS

STATION NO. 6

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./ day at 25° C	Coliform M.P.N. per 100 ml.
8-11	1215	54	30	7.3	49.5	5	31	5.2	68	2.2	804	91
8-12	1000	51		7.0	45	4	42	4.2		1.4	485	2,400
8-21	0930	310	25	6.4	31	7	36	1.1	13	2.3	4,810	290
8-26	0650	14	24	6.6	35	3	30	3.2	38	2.1	199	2,400
9-2	1630	2	32	7.0	53	3	48	5.2	70	2.3	31	30
9-8	1820	1	27	7.3	47	5	84	6.6	82	2.2	15	91
Avg.			28		43	5	45	4.3	54	2.1	1,060	880

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-11	1215	16	80	<10	0.30	0.04	0.060	90	2	88
8-12	1000	25	95	<10	0.20	0.07	0.030	88	3	85
8-21	0930	15	220	<10	0.40	0.24	0.010	97	8	89
8-26	0650	25	170	352.0	0.40	0.16	0.040	1,475	15	1,460
9-2	1630	23	180	<10	0.30	0.02	0.030	99	10	89
9-8	1820	18	145	<10	0.20	0.23	0.020	93	0	93
Avg.		20	148		0.30	0.13	0.032	324	6	318

TABLE 6

ANALYTICAL RESULTS

STATION NO. 7

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-11	1300	33	30	7.0	30	8	21	0.80	11	11.0	2,450	9,300
8-12	1030	32		6.6	33	9	36	0.7		3.6	778	4,300
8-21	0845	190	24	6.1	20	4	34	0.5	6	2.1	2,680	4,300
8-26	0612	10	23	6.2	20	3	34	1.8	21	2.2	149	930
9-2	1600	1	31	7.0	25	5	46	5.1	68	4.4	30	300
9-8	1755	0	27	6.7	31	10	58	2.3	29	3.2	0	
Avg.			27		27	7	38	1.9	27	4.4	1,000	3,800

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-11	1300	35	130	<10	0.30	0.14	0.060	95	1	94
8-12	1030	16	155	<10	0.20	0.14	0.015	100	0	100
8-21	0845	12	170	<10	0.60	0.10	0.100	128	12	116
8-26	0612	18	130	<10	0.30	0.25	0.050	109	0	109
9-2	1600	16	105		0.40	0.08	0.025	1,821	7	1,814
9-8	1755		16	120	0.80	0.20	0.005	124	2	122
Avg.		19	118		0.43	0.15	0.043	396	4	392

TABLE 6

ANALYTICAL RESULTS

STATION NO. 8

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-11	1330	8	26	6.4	24	5	22	2.1	26	1.3	70	1,500
8-12	1045	29		6.1	24	6	40	0.7		0.93	136	2,300
8-21	0830	180	20	5.8	13	4	32	4.9	53	0.9	1,100	2,300
8-26	0555	10	20	6.0	19	3	42	4.6	50	1.2	81	4,300
9-2	1540	1	27	6.4	22	3	38	1.7	21	1.9	13	930
9-8	1730	0	24	6.5	29	5	44	1.4	16	1.8	0	930
Avg.			23		22	4	36	2.6	33	1.3	233	2,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-11	1330	14	105	<10	0.30	0.14	0.060	91	0	91
8-12	1045	12	155	<10	0.10	0.09	0.015	91	0	91
8-21	0830	16	130	<10	0.20	0.24	0.010	110	10	100
8-26	0555	20	155	<10	0.50	0.23	0.025	104	3	101
9-2	1540	12	60	<10	0.20	0.18	0.015	118	1	117
9-8	1730	11	195	<10	0.50	0.30	0.010	123	1	122
Avg.		14	133		0.30	0.19	0.023	106	3	103

TABLE 6

ANALYTICAL RESULTS

STATION NO. 9

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-12	1145	3,600		7.2	51	4	52	5.2		0.5	12,200	
8-13	0545	4,600	26	7.4	52	4	64	5.0	61	0.6	18,900	240
8-21	0745	5,100	25	7.2	51	4	58	3.7	44	1.0	34,400	430
8-26	0935	3,400	24	7.2	53	4	64	5.2	61	0.8	18,400	2,400
9-2	1745	3,400	28	7.4	56	3	50	5.2	66	0.7	16,000	2,400
9-8	1345	2,400	27	7.4	54	3	88	5.1	63	1.6	25,900	9,300
Avg.			26		53	4	63	4.9	59	0.9	20,800	3,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-12	1145	25	145	<10	0.00	0.02	0.030	104	27	77
8-13	0545	42	180	<10	0.10	0.02	0.035	129	39	90
8-21	0745	25	153	<10	0.20	0.07	0.030	127	38	89
8-26	0935	32	155	<10	0.20	0.11	0.010	111	13	98
9-2	1745	32	170	<10	0.20	0.08	0.025	111	9	102
9-8	1345	18	55	<10	0.00	0.02	0.030	108	9	99
Avg.		29	143		0.12	0.05	0.027	115	23	92

TABLE 6

ANALYTICAL RESULTS

STATION NO. 10

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-12	1130	3,600		7.5	59	4	58	5.0		0.9	21,900	1,500
8-13	0535	4,600	26	7.3	52	3	54	4.9	60	1.3	40,400	430
8-21	0735	5,100	25	7.2	54	4	48	3.8	45	1.1	37,900	430
8-26	0930	3,400	24	7.2	55	3	64	5.2	61	0.9	20,700	930
8-27	0600		24					5.5	65	2.6		
	0700		24					5.7	67	2.1		
	0900		25					5.6	67	1.9		
	1100		26					5.5	67	1.7		
	1300		26					5.3	65	1.9		
	1500		26					5.0	61	1.8		
	1700		26					4.5	55	1.7		
9-2	1735	3,400	28	7.4	61	3	62	5.4	68	0.9	20,700	230
9-3	1315		29					4.6	59	1.9		
	1500		29					4.5	58	1.6		
	1700		29					4.3	55	1.4		
	1900		28					4.4	56	1.4		
9-8	1335	2,400	27	7.3	60	4	84	4.9	61	1.3	21,100	430
Avg.		3,750	26		57	4	62	4.9	61	1.6	27,100	660

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-12	1130	42	120	<10	0.20	0.02	0.025	114	12	102
8-13	0535	35	155	<10	0.00	0.02	0.030	117	23	94
8-21	0735	32	155	<10	0.20	0.13	0.025	120	50	70
8-26	0927	37	145	<10	0.20	0.08	0.015	114	18	96
9-2	1735	30	105	<10	0.40	0.04	0.015	110	19	91
9-8	1335	20	80	<10	0.25	0.10	0.000	105	5	100
Avg.		33	127		0.21	0.07	0.018	113	21	92

TABLE 6

ANALYTICAL RESULTS

STATION NO. 11

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-12	1130	3,600		7.4	55	4	45	5.0		1.3	31,700	930
8-13	0530	4,600	26	7.3	52	3	44	4.8	58	0.7	21,600	750
8-21	0730	5,100	25	7.2	53	4	50	3.9	47	1.6	55,800	430
8-26	0922	3,400	24	7.3	58	3	64	4.6	54	1.2	27,500	230
9-2	1725	3,400	28	7.4	59	3	64	5.2	66	0.9	20,700	230
9-8	1330	2,400	27	7.3	52	4	84	5.1	63	1.6	25,900	430
Avg.			26		55	4	59	4.8	58	1.2	30,500	500

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-12	1130	51	170	<10	0.10	0.01	0.035	127	29	98
8-13	0530	37	180	<10	0.00	0.03	0.020	126	40	86
8-21	0730	32	145	<10	0.20	0.07	0.030	119	32	87
8-26	0922	35	170	<10	0.20	0.12	0.000	106	27	79
9-2	1725	37	130	<10	0.35	0.04	0.015	110	25	85
9-8	1330	30	130	<10	0.00	0.02	0.030	113	12	101
Avg.		37	154		0.14	0.05	0.022	117	28	89

TABLE 6

ANALYTICAL RESULTS

STATION NO. 12

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-19	1305		24	6.8	32	4	48	2.3	27	0.5		9,300
8-27	0735		23	6.5	27	3	44	3.2	37	4.3		150
9-9	0920		24	6.8	47	7	44	1.2	14	2.4		430
9-10	0515		25	6.6	48	8	64	1.2	14	1.6		1,500
Avg.			24		38	6	50	2.0	23	2.2		2,800

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-19	1305	37	180	<10	0.50	0.33	0.012	115	10	105
8-27	0735	14	195	<10	0.20	0.13	0.020	103	0	103
9-9	0920	12	130	12.8	0.30	0.17	0.030	155	5	150
9-10	0515	25	150	<10	0.30	0.06	0.035	117	0	117
Avg.		22	153		0.33	0.17	0.024	123	4	119

TABLE 6

ANALYTICAL RESULTS

STATION NO. 13

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C lbs./day	B. O. D. 5 Day at 25° C	Coliform M.P.N. per 100 ml.
8-19	1250		26	7.3	58	7	72	0.0	0	8.6		2,400
8-27	0720		25	7.2	17	8	56	2.2	26	12.5		930
9-9	0905		27	7.6	135	1	89	0.0	0	22.4		4,300
9-10	0500		26	7.8	130	7	108	0.0	0	≥26.4		9,300
Avg.			26		85	6	81	0.6	7	14.5		4,200

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-19	1250	25	255	<10	0.60	0.17	0.030	200	19	181
8-27	0720	45	205	<10	0.20	0.19	0.010	153	14	139
9-9	0905	43	205	84.1	0.50	0.14	0.012	355	24	331
9-10	0500	48	180	135.0	0.40	0.28	0.015	419	36	383
Avg.		40	211		0.42	0.19	0.017	282	23	259

TABLE 6

ANALYTICAL RESULTS

STATION NO. 14

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-18	0715		26	7.1	40	9	46	0.9	11	2.3		930
8-25	1346		28	7.2	30	4	52	0.2	3	4.1		430
9-3	1615		31	7.2	49	9	76	5.1	68	2.3		360
9-9	1000		27	7.1	57	8	41	1.8	22	4.9		230
9-30	1230		27	7.0	59	6	154	2.4	30	2.8		1,100
Avg.			28		47	7	74	2.1	27	3.3		610

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-18	0715									
8-25	1346	27	155	<10	0.20	0.02	0.030	104	6	98
9-3	1615	20	145	<10	0.10	0.10	0.005	113	9	104
9-9	1000	40	195	<10	0.30	0.23	0.012	129	19	110
9-30	1230	37	205	<10	0.60	0.25	0.030	119	20	99
Avg.		31	175		0.30	0.15	0.019	116	13	103

TABLE 6

ANALYTICAL RESULTS

STATION NO. 15

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-26	1015	3,500	25	7.3	58	12	58	4.3	51	1.1	25,900	1,500
9-2	1830	3,400	28	7.4	58	4	54	4.4	56	1.9	43,500	730
9-8	1250	1,800	27	7.3	56	4	88	5.2	64	1.6	19,400	430
9-10	0600	2,500	24	7.2	62	4	80	3.4	40	0.9	15,300	430
9-10	0800	2,500	24	7.2	64	4	100	3.5	41	1.4	23,700	430
Avg.			26		60	6	76	4.2	50	1.4	25,560	700

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-26	1015	43	130	<10	0.20	0.10	0.000	153	53	100
9-2	1830	35	130	<10	0.20	0.08	0.020	119	25	94
9-8	1250	30	130	<10	0.00	0.14	0.010	103	13	90
9-10	0600	25	130	10.5	0.20	0.13	0.022	126	29	97
9-10	0800	58	195	<10	0.30	0.22	0.010	136	38	98
Avg.		38	143		0.18	0.13	0.012	127	31	96

TABLE 6

ANALYTICAL RESULTS

STATION NO. 22

Collected Date 1954	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
3-10	1120		9	7.0	28	5	40	9.2	80	1.2		
3-12	1340		10	6.8	24	5	46	9.1	81			
3-13	1540		11					8.0	72			
3-17	1740		11					6.9	62			
3-18	0955		10					7.8	69			
6-23	1520		29	7.2	40	10	52	0.7	10	7.3		
7-6	1545		30	7.4	49	4	39	4.8	63	3.0		
7-8	1145		30	7.3	47	4	52	4.9	65	1.6		
Avg.			18		38	6	46	6.4		3.3		

TABLE 6

ANALYTICAL RESULTS

STATION NO. 23

Collected Date 1954	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
3-10	1130		9	7.1	27	5	42	9.4	81	0.9		
3-12	1345		10	6.8	25	5	44	9.4	83			
3-13	1540		11					8.4				
3-17	1735		11					7.0				
3-18	0935		10					8.0				
6-23	1535		30	7.1	42	10	48	2.4		2.5		
7-6	1550		30	7.4	52	4	40	5.0		2.3		
7-8	1348		29	7.3	46	4	63	4.7		1.7		
Avg.			18		38	6	47	6.8		1.9		

STATION NO. 24

Collected Date 1954	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
3-10	1145		9	7.0	29	5	42	8.8		1.8		
3-12	1350		10	6.8	26	5	48	9.3				
3-13	1550		11					7.6				
3-17	1730		11					6.6				
3-18	0930		10					7.5				
6-23	1535		28	7.0	46	12	60	0.0		12.7		
7-6	1600		29	7.3	52	3	40	3.9		2.2		
7-8	1150		29	7.2	46	4	65	4.2		1.9		
Avg.			17		40	6	51	6.0		4.7		

TABLE 6

ANALYTICAL RESULTS

STATION NO. 31

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-25	M	1700	2,275	27					4.7	58	2.6	2.6	39,900	
	M	1900	2,430	27					4.3	53	2.3	2.3	37,700	
	M	2100	2,960	26					3.9	48	2.9	2.9	57,900	
	M	2300	3,840	26					3.3	40	2.2	2.2	57,000	
8-26	M	0100	4,750	25					3.1	37	2.6	2.6	83,400	
	M	0300	5,390	25					3.2	38	2.5	2.5	91,000	
	M	0500	5,600	25					3.5	42	3.0	3.0	113,000	
	M	0700	5,700	25					3.5	42	2.6	2.6	100,000	
	M	0900	5,750	26					3.2	39	2.3	2.3	89,300	
	M	1100	5,750	27					3.0	37	2.7	2.7	104,000	
	M	1300	5,750	27					3.0	37	3.0	3.0	116,000	
	M	1500	5,750	27					3.4	42	3.1	3.1	120,000	
8-28	M	0500	5,700	25					5.1	61	1.9	1.9	73,100	
	M	0700	5,900	25					5.1	61	1.4	1.4	55,800	
	M	0900	5,900	26					4.0	49	1.9	1.9	75,700	
	M	1100	5,300	26					4.3	52	2.0	2.0	71,600	
	M	1300	4,600	27					3.7	46	2.2	2.2	68,300	
	M	1500	4,300	27					3.3	41	1.9	1.9	55,200	
	M	1800	4,200	27					3.2	40	5.0	5.0	142,000	
	M	2000	4,450	26					3.6	44	6.1	6.1	183,000	
	M	2200	4,900	26					4.5	55	3.3	3.3	109,000	
	M	2400	4,700	26					4.9	60	2.9	2.9	92,000	
8-29	M	0200	4,500	26					5.5	67	2.4	2.4	72,900	
	M	0400	5,300	26					5.2	63	3.1	3.1	111,000	
9-1	M	1800	2,100	29					4.2	54	1.9	1.9	27,000	430
	M	1900	2,120	29					4.0	51	1.6	1.6	22,900	
	M	2100	2,150	29					4.0	51	2.9	2.9	42,100	2,400
	M	2300	2,150	29					3.8	49	1.9	1.9	27,600	
9-2	M	0100	2,160	29					4.0	51	2.2	2.2	32,100	430
	M	0300	2,170	28					4.5	57	1.7	1.7	25,000	
	M	0500	2,230	28					4.6	58	2.6	2.6	39,100	2,400

TABLE 6

ANALYTICAL RESULTS

STATION NO. 31 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average lbs./day 5 Day at 25° C	Coliform M.P.N. per 100 ml.
9-2	M	0700	2,750	28					4.5	57	1.5	1.5	27,800	
	M	0900	3,600	28					3.8	48	2.0	2.0	48,600	930
	M	1100	4,475	29					4.1	53	2.3	2.3	69,500	
	M	1300	5,100	29					3.7	47	2.3	2.3	79,200	930
	M	1430	5,950	29					3.5	45	5.8	5.8	233,000	
	R	1545		19	7.5	68	5	88	3.4	36	2.5			430
10-14	M	1545	2,300	19	7.4	67	5	66	3.3	35	2.7	2.6	40,400	1,500
	R	1930		19	7.5	67	5	76	3.3	35	2.3			1,100
10-14	M	1930	2,600	19	7.5	67	7	70	3.3	35	4.3	3.3	57,900	930
	R	2330		19	7.5	64	5	76	3.6	39	1.6			430
10-14	M	2330	2,600	19	7.5	65	5	86	4.2	45	2.7	2.2	38,600	1,500
Avg.			4,106	26		66	5	77	3.8	48	2.6		75,100	1,100

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-14	R	1545	32	80	<10	0.20	1.0	0.050	122	18	104
	M	1540	12	105	<10	0.30	1.0	0.050	120	6	114
10-14	R	1930	10	55	<10	0.20	0.50	0.050	124	9	115
	M	1930	14	78	<10	0.30	0.90	0.100	128	0	128
10-14	R	2330	10	55	<10	0.20	0.01	0.040	116	8	108
	M	2330	15	95	<10	0.40	0.01	0.050	136	92	44
Avg.			16	78		0.26	0.57	0.057	124	22	102

TABLE 6

ANALYTICAL RESULTS

STATION NO. 31A The location of this station varies with the location of the point of lowest dissolved oxygen at the time of sampling.

Collected Date 1956	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20 °C	B. O. D. lbs./day at 25 °C	Coliform M.P.N. per 100 ml.
8-29	1400	4000	25					3.5	42	2.4	64,800	
8-30	1545	4090	26					3.9	48	1.5	41,400	
8-31	1600	4710	26					3.2	39	2.1	66,800	
9-1	1600	5510	26					3.9	47	1.6	59,500	
9-4	1500	1620	26					2.5	30	1.2	13,100	
9-5	1515	3970	25					1.9	23	2.1	56,300	
9-6	1400	4420	25					2.6	31	1.5	44,800	
9-8	1400	3180	24					2.9	34	0.9	19,300	
9-11	1400	2750	24					4.3	50	0.8	14,900	
9-12	1300	3220	24					2.5	29	1.4	30,400	
9-13	1400	3690	23					4.8	55	1.6	39,900	
9-14	1400	4540	23					4.4	51	1.1	33,700	
9-15	1230	6560	23					5.1	59	1.6	70,800	
9-16	1200	4210	24					4.8	56	1.2	34,100	
9-17	1800	2610	24					3.1	36	2.8	49,300	
9-18	1400	5110	22					4.1	46	1.4	48,300	
9-19	1500	6190	23					4.5	52	1.4	58,500	
9-20	1245	6070	23					5.1	59	2.6	106,500	
9-21	1200	5400	21					3.3	37	3.1	113,000	
9-22	1300	2910	22					4.0	45	2.2	43,200	
Avg.		4240	24					3.7	43	1.7	50,400	

TABLE 3

ANALYTICAL RESULTS

STATION NO. 32

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D_2O_2	% D_2O_2 Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-10	R	1300		27					3.6	44	1.0			
8-10	M	1300	2,055	27					3.6	44	1.7	1.4	19,400	
8-10	M	1400	2,062	27					3.5	43	1.4	1.4	19,500	
8-10	M	1500	2,075	27					3.6	44	1.5	1.5	21,000	
	R			27					3.6	44	1.2			
8-10	M	1600	2,085	27					3.6	44	1.7	1.5	21,100	
	L			27					3.6	44	1.6			
8-10	M	1700	2,090	27					3.5	43	1.6	1.6	22,600	
8-10	M	1800	2,100	27					3.3	41	1.6	1.6	22,700	
	R			26					3.4	41	1.4			
8-10	M	1900	2,105	26					3.3	40	1.8	1.7	24,200	
	L			26					3.3	40	2.1			
8-10	M	2000	2,120	26					3.2	39	1.3	1.3	18,600	
8-17	M	2300	2,185	27					3.7	46	3.1	3.1	45,700	
8-18	M	0200	2,250	27					3.0	37	3.0	3.0	45,600	
8-18	M	0300	2,270	26					2.8	34	3.9	3.9	59,800	
8-24	M	1840	1,954	26					3.8	46	3.0	3.0	39,600	
	M	2030	1,988	26					3.4	41	3.9	3.9	52,300	
	M	2240	2,012	25					3.2	38	3.9	3.9	53,000	
8-25	M	0010	2,034	26					2.7	33	4.9	4.9	67,300	
	M	0215	2,040	26					2.7	33	5.0	5.0	68,900	
	M	0400	2,060	26					2.6	32	3.6	3.6	50,100	
	M	0600	2,070	26					2.8	34	3.3	3.3	46,100	
	M	0800	2,140	27					2.7	33	3.1	3.1	44,800	
	M	1000	2,460	28					2.9	37	3.1	3.1	51,500	
	M	1200	3,215	28					3.3	42	5.5	5.5	119,000	
	M	1400	4,167	28					3.3	42	6.2	6.2	174,000	
	M	1600	4,940	28					2.8	35	6.5	6.5	217,000	
	M	1800	5,357	28					2.9	37	4.2	4.2	152,000	
	M	2000	5,421	28					3.1	39	3.4	3.4	124,000	2,400
	M	2200	5,157	27					3.2	40	6.3	6.3	219,000	
8-27	M	1600	5,652	27					4.9	60	4.1	4.1	156,000	2,400
	M	1800	5,662	27					4.0	49	4.6	4.6	176,000	
	M	2000	5,584	26					3.7	45	3.7	3.7	139,000	9,300

TABLE 6

ANALYTICAL RESULTS

STATION NO. 32 - (Continued)

Collected			Dis-charge cfs.	Temp. °C	pH	Alk.	Cl^-	Hard-ness	D_2O_2	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
Date 1953	Loc.	Time												
	M	2200	5,390	26					3.2	39	3.7	3.7	135,000	
	M	2400	5,039	25					3.0	36	3.2	3.2	109,000	12,000
8-27	M	0400	4,318	25					5.3	63	2.5	2.5	72,900	930
	M	0600	4,071	25					5.2	62	2.3	2.3	63,200	
	M	0800	3,952	25					5.3	63	2.0	2.0	84,400	930
8-28	M	1000	4,147	26					5.2	63	2.3	2.3	64,400	
	M	1200	4,614	27					4.8	59	2.0	2.0	62,300	930
8-31	M	1930	1,995	29					3.3	42	2.2	2.2	29,600	
	M	2045	2,000	29					3.2	41	1.7	1.7	23,000	
	M	2230	2,000	28					2.9	37	2.3	2.3	31,100	
	M	2400	2,010	27					3.0	37	2.8	2.8	38,000	430
9-1	M	0200	2,030	27					3.4	42	2.3	2.3	31,500	
	M	0400	2,040	27					3.5	43	1.7	1.7	23,400	930
	M	0600	2,055	27					3.9	48	2.0	2.0	27,700	
	M	0800	2,290	27					4.1	51	1.9	1.9	29,400	730
	M	1000	2,315	27					4.3	53	1.8	1.8	28,100	
	M	1200	3,050	29					4.2	54	2.0	2.0	41,200	930
	M	1400	3,050	29					4.0	51	2.0	2.0	41,200	
	M	1600	4,830	29					3.7	47	2.1	2.1	68,500	2,400
	M	1800	5,245	28					3.4	43	2.1	2.1	74,400	
	M	2000	5,285	28					2.9	37	2.8	2.8	99,900	4,300
	M	2200	5,135	27					3.0	37	2.1	2.1	72,800	
10-14	R	0400	2,510	19	7.3	60	6	82	4.1	44	4.3			
	M	0400		19	7.7	63	5	52	4.1	44	5.1	4.7	79,600	
	R	1000		19	7.8	66	6	100	4.2	45	4.8			
10-14	M	1000	2,630	19	7.8	73	7	76	4.9	52	4.8	4.8	85,200	
Avg.			3,195	26		66	6	78	3.6	44	3.0		69,500	3,000

TABLE 6

ANALYTICAL RESULTS

STATION NO. 32 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-14 =	(R	0400	18	120	<10	0.10	0.01	0.400	118	15	103
	(M	0400	12	55	<10	0.20	0.45	0.050	120	3	117
10-14 =	(R	1000	12	80	<10	0.20	0.95	0.050	145	4	141
	(M	1000	12	80	<10	0.20	0.90	0.100	129	8	121
Avg.			13	84		0.17	0.58	0.150	128	8	120

STATION NO. 33

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
	(R			24					3.5	41	2.9			
8-9 =	(M	1835	2,000	24					3.4	40	2.2	2.4	32,400	
	(L			24					3.7	44	2.3			
	(R			24					3.5	41	2.5			
8-9 =	(M	1925	1,920	24					3.7	44	2.4	2.4	31,100	
	(L			24					3.8	45	2.3			
	(R			24					3.5	41	3.1			
8-9 =	(M	2010	1,930	24					3.6	42	2.7	2.5	32,600	
	(L			24					3.3	39	1.7			
	(R			24					3.3	39	1.9			
8-9 =	(M	2105	1,930	24					3.4	40	2.5	2.4	31,300	
	(L			24					3.5	41	2.9			
	(R			24					3.1	36	2.6			
8-9 =	(M	2205	1,950	24					3.1	36	2.3	2.3	30,300	
	(L			24					3.1	36	2.0			
	(R			25					3.1	37	3.1			
8-9 =	(M	2305	1,960	25					3.1	37	2.9	3.0	39,700	
	(L			25					3.4	40	3.0			
8-9 =	(R			25					2.7	32	2.7			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 33 - (Continued)

Collected Date 1953	Loc.	Time	Dis. charge c.f.s.	Temp. °C	pH	Alk.	Cl^-	Hard-ness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-9	=(M	2400	1,970	25					2.6	31	2.6	2.6	34,600	
	(L			25					3.0	36	2.5			
	(R			27					2.8	35	3.2			
8-17	=(M	0430	1,800	27					3.1	38	3.8	3.7	45,000	7,300
	(L			27					3.2	40	4.1			
	(R			27					2.9	36	3.9			
8-17	=(M	0515	1,870	27					3.1	38	3.8	3.9	49,200	9,300
	(L			27					3.1	38	4.0			
	(R			27					3.4	42	5.3			
8-24	=(M	0500	1,910	27					3.7	46	5.8	5.5	71,000	
	(L			27					3.9	48	5.3			
	(R			27					3.2	40	5.6			
8-24	=(M	0700	2,040	27					3.6	44	5.2	5.4	74,300	
	(L			27					3.8	47	5.4			
	(R			28					2.9	37	6.2			
8-24	=(M	0900	2,070	28					3.1	39	5.9	6.0	83,800	
	(L			28					3.4	43	5.9			
	(R			28					3.0	38	6.3			
8-24	=(M	1100	2,210	28					3.4	43	5.9	5.9	88,000	
	(L			28					3.3	42	5.5			
	(R			28					3.5	44	6.3			
8-24	=(M	1300	2,280	28					3.9	49	5.9	5.9	90,800	
	(L			28					4.3	54	5.5			
	(R			29					3.5	45	5.2			
8-24	=(M	1500	2,330	29					3.8	49	5.6	5.2	81,800	
	(L			29					4.1	53	4.8			
	(R			26					3.4	41	4.4			
8-24	=(M	1725	2,380	26					3.6	44	4.4	4.6	73,900	
	(L			26					3.9	48	4.9			
8-24	=(R			26					3.8	46	8.0			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 33 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-24	(M	1920	2,300	26					4.1	50	4.2	5.0	77,600	
	(L			26					4.2	51	2.9			
	(R			25					3.9	46	4.6			
8-24	(M	2150	2,370	25					4.2	50	3.3	4.4	70,400	
	(L			25					4.6	55	5.3			
	(R			26					4.0	49	6.1			
8-24	(M	2320	2,400	26					4.2	51	4.3	4.8	77,800	
	(L			26					4.3	52	4.0			
	(R			25					3.6	43	5.3			
8-25	(M	0110	2,320	25					3.7	44	5.7	5.3	83,000	
	(L			25					4.2	50	4.9			
	(R			25					3.3	39	5.9			
8-25	(M	0325	2,400	25					3.6	43	5.8	5.5	89,100	
	(L			25					4.0	48	4.8			
	(R			26					5.4	66	2.5			
8-27	(M	0200	3,890	26					5.9	72	2.3	2.1	55,100	
	(L			26					5.6	68	1.5			
	(R			26					5.0	61	3.1			
8-27	(M	0400	3,150	26					5.1	62	2.4	2.7	57,400	24,000
	(L			26					5.4	66	2.5			
	(R			26					4.4	80	3.1			
8-27	(M	0600	2,680	26					4.5	55	3.3	3.1	56,100	
	(L			26					4.9	60	2.9			
	(R			26					3.9	48	3.9			
8-27	(M	0800	2,310	26					4.2	51	3.9	3.7	57,700	46,000
	(L			26					4.7	57	3.2			
	(R			26					3.7	45	3.6			
8-27	(M	1000	2,070	26					3.6	44	4.4	4.2	58,700	
	(L			26					4.0	49	4.4			
	(R			26					4.8	59	5.6			
8-27	(M	1200	2,910	26					5.3	65	5.2	5.6	110,000	9,300
	(L			26					5.5	67	6.0			
8-27	(R			26					5.6	68	4.3			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 33 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-27	=(M	1400	6,930	26					5.8	71	5.1	4.5	211,000	
	(L			26					5.9	72	3.9			
	(R			26					6.0	73	4.5			
8-27	=(M	1600	7,810	26					6.2	76	4.7	4.3	227,000	4,300
	(L			26					6.4	78	3.7			
	(R			26					6.0	73	3.8			
8-27	=(M	1800	7,350	26					6.2	76	3.4	3.5	174,000	
	(L			26					6.3	77	3.3			
	(R			26					5.9	72	4.2			
8-27	=(M	2000	6,530	26					6.1	74	4.1	3.8	168,000	9,300
	(L			26					6.4	78	3.2			
	(R			26					5.8	71	3.4			
8-27	=(M	2200	5,700	26					5.7	70	3.9	3.7	142,000	
	(L			26					6.0	73	3.8			
	(R			27					3.3	41	4.2			
8-31	=(M	0530	1,780	27					3.5	43	4.5	4.3	51,700	12,000
	(L			27					3.7	46	4.3			
	(R			27					3.3	41	4.9			
8-31	=(M	0700	1,850	27					3.6	44	3.7	4.5	56,200	
	(L			27					3.7	46	4.7			
	(R			27					3.7	46	3.8			
8-31	=(M	0900	2,050	27					4.2	52	3.2	3.4	47,000	24,000
	(L			27					4.4	54	3.3			
	(R			27					3.9	48	2.4			
8-31	=(M	1100	2,010	27					4.2	52	1.8	2.8	38,000	
	(L			27					4.4	54	3.4			
	(R			28					4.2	53	2.1			
8-31	=(M	1300	2,040	28					4.7	59	2.4	2.3	31,700	4,300
	(L			28					4.7	59	2.4			
8-31	=(R			28					4.4	56	3.1			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 33 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D. O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-31	(M	1500	2,080	28					5.0	63	2.0	2.5	35,100	
	(L			28					5.0	63	2.3			
	(R			29					4.6	59	2.3			
8-31	(M	1755	2,040	29					4.7	60	3.2	3.1	42,700	4,300
	(L			29					5.0	64	3.8			
	(R			29					4.6	59	2.7			
8-31	(M	1900	2,050	29					5.1	65	2.8	2.9	40,200	
	(L			29					5.0	63	3.0			
	(R			29					4.4	56	1.9			
8-31	(M	2120	2,070	29					4.7	60	2.0	2.1	29,400	4,300
	(L			29					4.9	63	2.3			
	(R			28					4.3	54	3.1			
8-31	(M	2300	2,100	28					4.5	57	3.2	2.9	41,100	
	(L			28					4.8	61	2.5			
	(R			27					4.3	53	3.0			
9-1	(M	0100	2,010	27					4.5	56	2.4	2.5	34,000	4,300
	(L			27					4.8	59	2.3			
	(R			27					4.2	52	2.5			
9-1	(M	0300	2,100	27					4.4	54	2.0	2.3	32,600	
	(L			27					4.7	58	2.4			
	(R			23	8.2	61	5	58	4.3	50	5.8			4,300
10-6	(M	1400	5,300	23	8.2	61	5	78	4.6	53	6.8	6.2	222,000	24,000
	L			23	8.3	60	6	62	4.6	53	6.0			3,900
	(R			22	8.3	62	8	54	5.4	61	4.0			
10-6	(M	1630	6,500	22	8.2	59	6	74	5.7	65	4.6	4.7	206,000	
	(L			22	7.9	58	6	70	6.0	68	5.6			
	(R			22	8.2	58	5	66	6.0	68	3.3			9,300
10-6	(M	1800	6,500	22	8.3	60	6	78	6.0	68	4.1	4.0	176,000	24,000
	(L			22	8.2	59	7	70	6.3	71	4.5			15,000
10-6	(R			22	7.9	58	4	84	5.9	67	5.0			9,300

TABLE 6

ANALYTICAL RESULTS

STATION NO. 33 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-6	(M	2000	6,200	22	8.2	60	5	66	6.0	68	4.3	5.1	213,000	9,300
	(L			22	8.1	59	6	80	6.2	70	6.0			9,300
Avg.			3,000	26		60	6	70	4.3	53	3.9		81,300	12,000

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-6	(R	1400	10	120		0.40	0.35	0.050	133	18	115
	(M	1400	18	130		0.30	0.07	0.030	135	19	116
	(L	1400	32	105		0.20	0.12	0.030	151	26	125
10-6	(R	1630	12	64		0.30	0.13	0.025	101	9	92
	(M	1630	18	80	<10	0.30	0.13	0.020	144	30	114
	(L	1600	18	95	<10	0.40	0.11	0.040	140	37	103
10-6	(R	1800	23	170		0.50	0.17	0.030	95	10	85
	(M	1800	23	145		0.30	0.13	0.020	130	21	109
	(L	1800	16	145		0.30	0.08	0.100	148	35	113
10-6	(R	2000	16	120	<10	0.30	0.22	0.030	108	5	103
	(M	2000	20	170	<10	0.20	0.14	0.010	138	21	117
	(L	2000									
Avg.			19	122		0.32	0.15	0.35	129	21	108

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M. P. N. per 100 ml.
	R	1800		30					4.1	54	10.9			
3-16	M	1800	1,200	30					4.4	58	9.9	9.5	77,000	
	L	1800		30					4.9	64	7.8			
	R	1900		30					3.9	51	9.9			
8-16	M	1900	1,220	30					4.4	58	8.8	8.6	70,800	
	L	1900		30					5.4	71	7.1			
	R	2000		29					4.0	51	9.8			
8-10	M	2000	1,190	29					4.3	55	8.6	8.3	66,700	
	L	2000		29					5.4	69	6.5			
	R	1800		23					4.0	46	11.4			
8-23	M	1800	1,350	23					4.2	48	9.4	9.0	82,000	
	L	1800		23					5.9	68	6.1			
	R	2000		23					4.0	46	10.3			
8-23	M	2000	1,670	23					4.9	56	8.4	9.2	104,000	
	L	2000		23					5.9	68	7.8			
	R	2200		22					4.0	45	12.5			
8-23	M	2200	1,830	22					5.0	57	10.0	11.0	136,000	
	L	2200		22					5.4	61	10.5			
	R	2400		23					4.0	46	13.3			
8-23	M	2400	1,840	22					4.4	50	11.4	11.1	138,000	
	L	2400		22					5.2	59	8.7			
	R	0200		22					4.1	47	11.9			
8-24	M	0200	1,980	22					4.9	56	5.9	8.0	107,000	
	L	0200		22					6.0	68	6.1			
	R	0400		22					3.9	44	12.0			
8-24	M	0400	2,040	22					5.7	65	10.1	9.4	129,000	
	L	0400		22					6.0	68	6.1			
	R	0600		22					4.1	47	> 15.1			
8-24	M	0600	2,090	22					5.2	59	> 15.8	> 15.6		
	L	0600		22					6.4	73	> 15.9			
8-24	R	0800		22					4.4	50	> 7.1			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34 -(Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-24	(M	0800	2,120	22					5.6	64	>15.6	>12.7		
	(L	0800		22					6.1	69	>15.3			
	(R	1000		23					4.6	53	13.0			
8-24	(M	1000	2,040	23					5.6	64	10.1	10.1	139,000	
	(L	1000		23					6.3	72	7.2			
	(R	1200		24					4.5	53	12.4			
8-24	(M	1200	2,070	24					5.9	69	12.1	10.2	143,000	
	(L	1200		24					6.7	79	6.0			
	(R	1400		25					4.1	49	>14.9			
8-24	(M	1400	2,110	25					4.1	49	14.4	12.6	180,000	
	(L	1400		25					5.9	70	8.6			
	(R	1600												
8-24	(M	1600	2,070	24					5.0	59	13.6	11.0	154,000	
	(L	1600		24					5.8	68	8.4			
	(R	1700		26					6.4	78	5.4			
8-26	(M	1700	3,920	26					7.2	88	4.8	5.4	143,000	
	(L	1700		26					7.6	93	5.9			
	(R	1900		26					5.4	66	9.2			
8-26	(M	1900	3,150	26					6.3	77	6.0	6.5	138,000	
	(L	1900		26					7.1	87	4.3			
	(R	2100		26					4.8	59	10.9			
8-26	(M	2100	2,660	26					5.7	70	6.6	8.1	145,000	
	(L	2100		26					6.0	73	6.9			
	(R	2300							4.0		11.2			
8-26	(M	2300	2,310						5.5		7.2	7.5	117,000	46,000
	(L	2300							5.6		4.1			
	(R	0100							4.1		11.9			
8-27	(M	0100	2,070						5.5		7.1	7.7	108,000	
	(L	0100							5.8		3.9			
8-27	(R	0300		25					4.5	54	9.1			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-27	(M	0300	2,750	25					5.5	65	8.4	7.7	143,000	46,000
	(L	0300		25					6.6	79	5.6			
	(R	0500		25					6.3	75	14.1			
8-27	(M	0500	6,930	25					7.1	85	6.3	8.2	384,000	
	(L	0500		25					7.4	88	4.2			
	(R	0700		25					6.5	77	6.2			
8-27	(M	0700	7,790	25					6.8	81	3.8	4.3	226,000	3,900
	(L	0700		25					7.4	88	3.0			
	(R	0900		25					4.5	54	7.5			
8-27	(M	0900	7,360	25					5.5	65	4.0	4.5	224,000	
	(L	0900		25					6.6	79	2.0			
	(R	1100		26					5.7	70	6.1			
8-27	(M	1100	6,570	26					6.8	83	4.2	4.8	213,000	46,000
	(L	1100		26					7.4	90	4.0			
	(R	1300		26					5.3	65	9.0			
8-27	(M	1300	5,730	26					6.9	84	4.9	5.8	224,000	
	(L	1300		26					7.0	85	3.5			
	(R	1800		28					4.0	51	12.3			
8-30	(M	1800	1,505	28					4.5	57	11.0	10.3	105,000	46,000
	(L	1800		28					5.8	73	7.7			
	(R	2000		27					3.7	46	10.5			
8-30	(M	2000	1,780	27					5.1	63	9.7	9.5	114,000	
	(L	2000		27					5.9	73	8.3			
	(R	2200		27					4.0	49	6.4			
8-30	(M	2200	1,910	27					4.9	60	5.4	5.3	68,300	
	(L	2200		27					5.8	72	4.1			
	(R	2400		27					4.0	49	4.6			
8-30	(M	2400	2,050	27					4.9	60	4.6	4.4	60,900	
	(L	2400		27					5.3	65	4.0			
8-31	(R	0200		27					3.9	48	5.7			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-31	(M	0200	1,975	27					5.0	62	3.8	4.2	56,000	46,000
	(L	0200		27					5.8	72	3.2			
	(R	0400		27					5.2	64	4.7			
8-31	=(M	0400	2,070	27					5.6	69	3.2	3.6	50,300	
	(L	0400		27					6.5	80	2.7			
	(R	0600		27					5.3	65	4.2			
8-31	=(M	0600	2,050	27					6.0	74	2.3	3.3	45,700	15,000
	(L	0600		27					6.3	78	3.3			
	(R	0800		27					5.3	65	5.2			
8-31	=(M	0800	2,040	27					5.9	73	4.2	4.7	64,700	
	(L	0800		27					6.3	78	4.4			
	(R	1000		28					5.2	66	4.6			
8-31	=(M	1000	2,040	28					5.9	75	6.2	4.9	67,500	24,000
	(L	1000		28					6.3	80	3.8			
	(R	1200		28					4.8	61	5.0			
8-31	=(M	1200	2,080	28					6.7	85	5.6	4.6	64,600	
	(L	1200		28					6.5	82	3.3			
	(R	1400		28					4.9	62	4.2			
8-31	=(M	1400	2,090	28					5.6	75	4.6	4.0	56,400	24,000
	(L	1400		28					6.5	82	3.2			
	(R	1600		28					4.3	54	5.0			
8-31	=(M	1600	2,000	28					5.4	68	4.6	5.2	70,200	
	(L	1600		28					6.5	82	5.9			
	(R	0100		19	8.2	65	2	42	6.2	66	20.3			93,000
10-13	=(M	0100	1,670	19	8.2	61	3	48	6.2	66	12.1	12.9	145,000	24,000
	(L	0100		19	8.3	54	6	60	7.4	79	6.2			7,300
	(R	0500		19	8.0	63	3	84	5.4	58	9.3			30,000
10-13	=(M	0500	1,560	19	7.9	62	5	74	6.0	64	6.0	6.8	71,600	24,000
	(L	0500		19	8.1	62	5	60	7.0	75	5.0			15,000
10-13	=(R	0700		19	8.1	67	1	84	4.6	49	9.0			

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34 - (Continued)

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B.O.D. 5 Day 20° C	B.O.D. Average 5 Day	B.O.D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-13	(M	0700	1,670	19	8.1	65	3	76	5.8	62	6.2	6.7	75,500	
	(L	0700		19	8.0	63	6	84	6.7	72	4.8			
	(R	0900		18	8.1	69	5	58	4.5	47	6.0			4,300
10-13	(M	0900	1,790	18	7.9	61	4	64	6.3	66	6.0	7.1	85,700	2,300
	(L	0900		19	7.8	58	7	60	6.7	72	9.5			24,000
	(R	1100		19	8.3	68	2	54	4.5	48	24.3			
10-13	(M	1100	2,450	19	8.3	63	3	74	5.8	62	8.0	12.3	203,000	
	(L	1100		19	8.1	63	5	66	7.0	75	4.6			
	(R	1300		19	8.2	73	1	102	4.2	45	12.0			24,000
10-13	(M	1300	3,230	19	8.0	67	5	114	5.6	60	10.0	9.2	200,000	24,000
	(L	1300		19	8.2	58	5	52	7.3	78	5.6			1,500
	(R	1500		19	8.3	67	1	92	5.6	60	9.5			24,000
10-13	(M	1500	3,390	19	8.3	61	5	64	6.5	70	10.5	8.1	185,000	
	(L	1500		19	8.3	59	4	64	7.6	81	4.4			
Avg.			2,600	25		64	4	70	5.5	66	7.5		125,000	27,000

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(R	0100	16	120	<10	0.20	0.14	0.040	142	8	134
10-13	(M	0100	32	105	<10	0.20	0.14	0.010	124	8	116
	(L	0100	30	30	<10	0.20	0.08	0.020	106	11	95
	(R	0500	27	105	<10	0.20	0.13	0.020	132	17	115
10-13	(M	0500	20	105	<10	0.20	0.08	0.020	112	7	105
	(L	0500	16	78	<10	0.20	0.14	0.010	148	9	139
	(R	0700	23	145	19.3	0.40	0.10	0.050	156	11	145
10-13	(M	0700	20	105	<10	0.10	0.09	0.010	124	7	117
	(L	0700	16	78	<10				113	7	105
	(R	0900	15	130	<10	0.20	0.18	0.020	146	2	144
10-13	(M	0900	18	130	<10	0.10	0.09	0.010	122	9	113
	(L	0900	32	95	<10	0.20	0.09	0.010	60	7	53

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(R	1100	23	120	<10	0.10	0.15	0.005	163	32	131
10-13	=(M	1100	14	80	<10	0.20	0.05	0.050	98	4	94
	(L	1100	16	65	<10	0.90	0.05	0.100	111	7	104
	(R	1300	43	170	<10	0.20	0.12	0.030	156	16	140
10-13	=(M	1300	20	90	<10	0.20	0.12	0.030	121	11	110
	(L	1300									
	(R	1500	27	90	<10	0.10	0.35	0.100	83	0	83
10-13	=(M	1500	30	90	<10	0.20	0.10	0.100	115	15	100
	(L	1500	35	45	<10	1.70	0.10	0.050	67	8	59
Avg.			24	99		.30	.12	.036	120	10	110

Collected Date 1954	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
4-25	R	1245	5,700	18	7.1	31	4	34	7.7	81	8.3	8.3	319,000	
5-1	R	0435	11,000	16	7.4	34			8.3	84	4.0	4.0	297,000	
5-1	R	0815	9,400	16	7.4	35			8.2	83	5.0	5.0	317,000	
5-1	R	2035	5,070	20	8.3	38			7.5	82	7.0	7.0	240,000	
5-2	R	0015	4,400	18	8.2	39			9.5	100	6.2	6.2	184,000	
	R	0435	4,230	19	8.1	38			7.1	76	6.9	6.9	197,000	
	R	2025	3,890	21	8.3	39			6.8	76	7.0	7.0	184,000	
	R	2345	3,720	20	8.2	39			7.0	76	5.0	5.0	126,000	
5-3	R	0910		21	7.8	41			6.0	67	8.0			
5-3	M	0910	3,720	21	7.4	34			7.5	83	3.3	4.5	113,000	
5-3	L	0910		21	7.2	31			8.1	90	2.1			
5-3	R	2015	3,890	22	8.3	45			5.5	63	8.5	8.5	223,000	
5-4	R	0030	4,570	21	8.3	40			6.0	67	5.6	5.6	173,000	
	R	0430	8,600	20	8.1	39			6.7	73	5.3	5.3	308,000	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34 - (Continued)

Collected			Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B_5 O_5 D_5 5 Day 20° C	Average 5 Day	lbs./day at 25° C	Coliform M.P.N. per 100 ml.
Date 1954	Loc.	Time												
-8	R	0425	10,000	16	7.7	36			8.1	82	5.2	5.2	351,000	
-8	R	0820	9,000	16	7.5	36			8.0	81	7.0	7.0	425,000	
-8	R	2020	3,390	19	8.4	39			7.3	78	6.3	6.3	144,000	
-9	R	0010	2,750	19	7.6	37			7.0	71	6.7	6.7	124,000	
-9	R	0420	2,600	19	7.7	38			6.8	72	7.1	7.1	125,000	
-9	R	2040	2,450	19	8.5	39			7.0	71	9.6	9.6	159,000	
-10	R	0015	2,310	18	8.7	42			6.8	72	12.5	12.5	195,000	
-10	R	2105	2,310	17	8.7	39			7.0	72	11.3	11.3	176,000	
-11	R	0035	2,310	17	8.7	44			7.0	72	10.0	10.0	156,000	
-11	R	0420	3,890	17	8.1	43			6.8	70	9.6	9.6	252,000	
-15	R	0815	9,800	14	7.7	36			8.7	87	3.5	3.5	232,000	
-15	R	2030	5,070	15	8.3	38			8.5	83	6.9	6.9	236,000	
-16	R	0045	3,720	15	8.3	38			8.4	82	7.0	7.0	176,000	
	R	0420	2,910	14	8.5	40			8.2	79	5.8	5.8	114,000	
	R	0810	2,310	15	8.5	40			8.1	79	9.1	9.1	142,000	
	R	2055	1,670	17	8.5	42			7.2	74	11.2	11.2	126,000	
-17	R	0020	1,560	17	7.9	42			7.3	75	10.3	10.3	108,000	
	R	2015	1,250	20	9.0	51			4.4	48	24.0	24.0	203,000	
5-18	R	0010	1,250	20	8.0	49			9.5	103	24.6	24.6	208,000	
	R	0735	3,070	19	8.8	48			3.2	34	16.9	16.9	350,000	
	R	1200	4,910	21	8.4	37			6.7	74	6.2	6.2	205,000	
Avg.			4,500	18		39	4	34	7.3	76	8.4	8.4	209,000	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 34

Collected Date 1956	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^{-}	Hardness	D.O.	% D.O. Sat.	B.O.D. 5 Day 20 °C	B.O.D. lbs./day at 25 °C	Coliform M.P.N. per 100 ml.
8-28	0930	1670	25					5.5	66	6.5	73,300	
8-29	0830	1670	25					5.7	68	6.4	72,100	
8-31	1000	2170	25					5.7	68	5.7	82,000	
9-3	1000	1670	24					4.9	57	4.7	53,000	
9-4	1000	1560	25					2.7	32	--		
9-5	1000	5390	25					4.6	55	8.0	232,800	
9-6	0930	4570	25					5.5	66	3.2	98,700	
9-7	0900	1790	25					4.7	56	3.3	39,900	
9-10	0930	1670	23					5.6	65	2.3	25,900	
9-11	0900	2310	22					2.2	25	2.4	37,400	
9-12	0830	1250	22					6.6	75	2.3	19,400	
9-13	0830	1250	22					7.2	82	2.1	17,700	
9-14	0800	1250	22					6.1	69	4.0	33,800	
9-15	0900	1670	24					6.6	77	2.8	31,600	
9-16	0900	1670	23					6.0	69	4.7	53,000	
9-17	0930	4910	24					6.1	72	3.6	119,300	
9-18	0930	2450	23					5.5	63	3.4	56,200	
9-19	0900	9250	23					5.6	65	2.8	174,800	
9-20	1000	2310	24					5.6	66	4.0	62,400	
9-21	0850	1250	22					7.0	80	3.9	26,300	
Avg.		2590	24					5.5	64	4.0	68,900	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 35

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
	(R	0135		19	9.0	140	4	102	4.4	47	26.8)			93,000
10-13	=(M	0130	1630	18	8.5	67	2	82	7.0	73	12.2)=	13.9	153,000	30,000
	(L	0125		18	8.3	57	7	74	8.3	87	2.8)			240,000
	(R	0630		18	9.3	82	2	84	4.4	46	31.0)			24,000
10-13	=(M	0625	1760	18	9.1	75	1	62	6.3	66	10.5)=	14.6	174,000	4,300
	(L	0620		18	7.4	48	8	74	8.1	85	2.2)			2,300
	(R	1025		19	9.2	85	4	78	4.3	46	41.8)			210,000
10-13	=(M	1020	3230	18	8.6	59	3	70	7.7	81	7.0)=	17.0	371,000	4,300
	(L	1015		18	8.2	52	5	72	8.5	89	2.3)			1,500
	(R	0525		21	9.4	124	5	102	3.7	41	34.1)			9,300
10-6	=(M	0515	4200	21	8.4	55	4	92	5.8	65	6.9)=	15.0	425,000	4,300
	(L	0505		21	7.3	48	5	66	7.5	83	4.0)			4,300
	(R	0740		22	9.0	138	2	110	5.6	63	13.3)			24,000
10-6	=(M	0735	7700	22	7.3	41	2	102	7.7	87	7.0)=	7.3	380,000	2,300
	(L	0730		22	7.3	45	5	78	7.5	85	1.5)			2,300
	(R	1045			8.9	71	1	74	6.1		28.6)			9,300
10-6	=(M	1035	8600		7.7	50	5	124	7.9		3.0)=	11.7	679,000	2,300
	(L	1030			7.5	46	5	132	7.7		3.5)			1,500
Avg.			4520	20		71	4	88	6.6	70	13.2 =	13.2	364,000	37,000

TABLE 6

ANALYTICAL RESULTS

STATION NO. 35 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(R	0135	15	255	<10	0.30	0.27	0.030	359	10	349
10-13	=(M	0130	18	145	<10	0.80	0.15	0.100	227	13	214
	(L	0125	18	105	<10	0.10	0.4	0.020	120	12	108
	(R	0630	16	270	<10	0.30	0.28	0.020	246	19	227
10-13	=(M	0625	32	170	<10	0.20	0.18	0.020	180	43	137
	(L	0620	16	71	<10	0.20	0.03	0.020	79	7	72
	(R	1025	62	270	<10	0.30	0.12	0.030	253	24	229
10-13	=(M	1020	32	130	<10	0.20	0.08	0.020	166	41	125
	(L	1015	25	66	<10	0.10	0.3	0.020	111	4	107
	(R	0525	42	255		0.50	0.27	0.030	240	83	157
10-6	=(M	0515	37	270		0.30	0.22	0.030	78	16	62
	(L	0505	10	49		0.20	0.05	0.045	89	1	88
	(R	0740	125	370	<10	0.30	0.22	0.030	365	198	167
10-6	=(M	0735	23	64		0.30	0.05	0.050	91	15	76
	(L	0730	6	31		0.20	0.13	0.250	95	2	93
	(R	1045	57	350		0.40	0.24	0.010	183	36	147
10-6	=(M	1035	20	145	<10	0.40	0.10	0.050	82	22	60
	(L	1030	20	105	<10	0.20	0.20	0.040	93	16	77
Avg.			32	173		0.29	0.17	0.045	170	31	139

TABLE 6

ANALYTICAL RESULTS

STATION NO. 35

Collected Date 1956	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20 °C	B. O. D. lbs./day at 25 °C	Coliform M.P.N. per 100 ml.
8-28	0745	1710	25					5.3	63	5.2	60,000	
8-29	0700	1720	24					5.1	60	8.4	97,500	
8-30	0600	1710	24					4.9	57	7.0	80,800	
8-31	0815	1660	24					5.0	58	6.0	67,200	
9-3	0800	1710	24					4.6	54	6.9	79,600	
9-4	0830	1330	24					4.0	47	9.4	84,400	
9-5	0700	1330	25					4.4	53	7.0	62,800	
9-6	0800	1330	25					4.0	48	10.8	97,000	
9-7	0730	1330	25					3.4	41	16.0	143,600	
9-11	0800	4500	23					6.1	70	7.8	236,900	
9-12	0730	2320	22					5.7	65	5.8	90,800	
9-13	0700	1320	22					5.4	61	12.4	110,500	
9-14	0630	1270	22					5.4	61	11.3	96,900	
9-15	0700	1710	23					5.5	63	5.3	61,200	
9-16	0700	1720	23					5.7	66	7.4	85,900	
9-17	0700	2640	23					5.4	62	5.6	99,800	
9-18	0700	1380	23					5.9	68	8.0	74,500	
9-19	0700	12000	23					6.3	73	3.7	299,700	
9-20	0730	1260	23					4.8	55	18.8	159,900	
9-21	0700	1260	22					5.2	59	13.2	89,800	
Avg.		2260	23					5.1	59	8.8	153,900	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 36

Collected Date 1953	Loc.	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. Average 5 Day	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
	(R	0105		19	9.2	78	7	60	4.8	51	51.3)			9,300
10-13	=(M	0100	1630	18	7.8	59	9	52	7.8	82	8.0)=	20.4	225,000	4,300
	(L	0055		18	7.2	45	7	78	8.5	89	2.0)			30
	(R	0605		18	9.5	109	5	68	2.9	30	58.3)			930
10-13	=(M	0600	1900	18	8.4	59	4	52	6.9	72	13.5)=	24.4	314,000	4,300
	(L	0555		18	7.3	46	7	54	8.4	88	1.5)			430
	(R	1005		19	9.6	128	3	66	4.6	49	28.3)			4,300
10-13	=(M	1000	3410	18	8.6	56	2	52	7.8	82	7.0)=	12.2	284,000	2,400
	(L	0955		18	7.2	50	10	48	8.7	91	1.5)			430
	(R	0720		22	9.0	80	1	134	6.2	70	17.9)			7,300
10-6	=(M	0715	8600	22	7.4	46	4	100	7.8	88	2.0)=	7.4	430,000	930
	(L	0705		22	7.5	46	2	120	7.2	82	2.3)			4,300
	(R	1020			8.3	67	1	162	6.8		14.5)			6,100
10-6	=(M	1010	8300		7.4	47	4	88	7.0		2.7)=	6.3	353,000	3,000
	(L	1010			7.4	47	4	153	7.9		1.7)			2,400
Avg.			4770	19		64	5	86	6.9	73	14.2)=	14.2	321,000	3,400

TABLE 6

ANALYTICAL RESULTS

STATION NO. 36 - (Continued)

Collected Date 1953	Loc.	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
	(R	0105	18	390	<10	1.80	0.20	0.100	326	64	262
10-13	=(M	0100	10	65	<10	0.20	0.30	0.040	100	5	95
	(L	0055	16	59	<10	0.20	0.00	0.020	95	2	93
	(R	0605	12	360	<10	0.60	0.15	0.050	283	65	218
10-13	=(M	0600	18	120	<10	0.50	0.30	0.020	136	8	128
	(L	0555	16	69	<10	0.00	0.01	0.050	79	9	70
	(R	1005	27	345	<10	0.30	0.24	0.015	290	26	264
10-13	=(M	1000	16	90	<10	0.40	1.00	0.020	140	18	122
	(L	0955	10	46	<10	0.10	0.04	0.010	58	9	49
	(R	0720	10	44		0.30	0.25	0.045	80	15	65
10-6	=(M	0715	90	345		0.20	0.13	0.020	273	85	188
	(L	0705	25	105	10	0.20	0.27	0.025	99	12	87
	(R	1020	30	245		0.30	0.25	0.450	172	44	128
10-6	=(M	1010	16	155	<10	0.20	0.18	0.020	91	16	75
	(L	1010	67	279	27.0	0.50	0.32	0.110	331	32	299
Avg.			25	181		0.39	0.24	0.066	170	27	143

TABLE 6

ANALYTICAL RESULTS

STATION NO. 37

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-9	1100	1,320	23					7.4	84	0.6	5,350	
	1200	1,280	24					7.5	88	0.7	6,050	
	1300	1,260	25					7.7	92	0.6	5,100	
	1400	1,250	25					7.8	93	0.4	3,380	
	1500	1,240	25					8.0	95	0.5	4,190	
	1600	1,230	26					8.0	98	0.3	2,490	
	1700	1,320	26					8.3	101	0.7	6,240	
	1800	1,590	26					8.2	100	0.6	6,440	
8-16	1500	1,100	26					8.1	99	0.7	5,200	
	1600	1,070	27					8.3	102	0.5	3,610	430
	1700	1,260	27					8.4	104	0.4	3,400	
8-23	1500	1,300	25					8.7	104	0.6	5,270	430
	1700	1,580	26					9.0	110	0.6	6,400	
	1900	1,840	26					8.8	107	0.6	7,450	430
	2100	1,860	25					8.2	98	0.6	7,530	
	2300	2,000	24					7.9	93	0.7	9,450	2,400
8-24	0100	2,100	24					7.8	92	0.7	9,920	
	0300	2,125	24					7.7	91	0.7	10,000	230
	0500	2,200	23					7.7	89	0.7	10,400	
	0700	2,150	23					7.7	89	0.6	8,710	91
	0900	1,960	23					7.7	89	0.4	5,290	
	1100	2,170	24					8.3	98	0.7	10,300	
	1300	2,150	26					8.7	106	0.6	8,710	
8-26	1200	5,000	26					8.0	98	0.9	30,400	150
	1400	4,200	26					8.1	99	1.2	34,000	
	1600	3,250	26					8.2	100	0.5	11,000	110
	1800	2,780	26					8.5	104	1.0	18,800	
	2000	2,430	26					8.2	100	0.8	13,100	73
	2200	2,140	26					7.9	96	1.1	15,900	
	2400	2,040	25					7.7	92	0.8	11,000	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 37 - (Continued)

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-27	0200	4,880	24					7.7	91	1.0	32,900	
	0400	8,900	25					7.7	92	1.1	66,100	36
	0600	8,390	25					7.5	89	1.2	68,000	
	0800	7,250	25					7.3	87	1.1	53,300	73
	1000	6,000	25					7.4	90	0.7	28,200	
8-30	1500	1,280	28					8.4	106	0.4	3,460	
	1700	1,710	29					8.6	110	0.5	5,170	930
	2000	1,870	28					7.9	100	0.6	7,570	
	2100	2,040	27					7.8	96	2.6	35,800	150
	2300	2,140	27					7.2	89	0.6	8,670	150
8-31	0100	2,040	27					7.2	89	0.5	6,890	
	0300	2,120	26					7.1	87	0.5	7,160	430
	0500	2,110	26					7.1	87	0.5	7,120	
	0700	2,140	26					7.0	85	0.6	8,670	73
	0900	2,150	26					7.1	87	0.4	5,810	
	1100	2,140						7.5		0.6	8,670	
	1300	2,150						8.2		2.1	30,500	
10-6	0230	3,700	21	7.2	49	4	146	7.6	85	1.6	40,000	430
	0615	8,600	21	7.5	50	4	146	7.9	88	2.1	122,000	2,100
10-13	0600	2,180	19	7.9	48	5	50	8.3	89	2.2	32,400	730
	1000	3,700	18	7.8	48	6	58	8.8	89	1.5	37,400	430
Avg.		2,660	25		49	5	100	7.9	95	0.8	17,700	490

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-6	0230	18	59	<10	0.30	0.05	0.050	102	11	91
10-6	0615	12	56		0.30	0.05	0.030	94	12	82
10-13	0600	12	51	<10	0.20	0.00	0.020	90	1	89
10-13	1000	10	29	<10	0.10	0.03	0.020	104	0	104
Avg.		13	49		0.22	0.03	0.030	98	6	94

TABLE 6

ANALYTICAL RESULTS

STATION NO. 37 - (Continued)

Collected Date 1954	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
4-25	1150	5,880	16	7.0	23	4	30	9.7	97	1.3	51,600	
	1605	5,620	18	7.0	22	4	30	10.0	105	1.0	37,900	
4-26	0750	5,250	18	7.0	24	4	28	9.1	96	0.7	24,800	
	1205	5,380	21	6.9	24	5	26	10.0	111	2.0	72,600	
4-30	2345	10,900	16	7.0	25			9.9	99	1.1	80,900	
5-1	0405	8,900	15	6.9	25			10.2	100	0.9	54,100	
	0750	6,950	15	6.8	26			9.5	93	0.9	42,200	
	1350	5,620	20	7.3	26			9.9	108	1.1	41,700	
	1600	5,120	21	7.3	27			9.8	109	1.1	38,000	
	2015	4,500	20	7.1	26			9.5	103	1.1	33,400	
	2345	4,300	18	7.0	27			9.5	100	1.0	29,000	
5-2	0355	4,200	18	7.0	25			9.2	97	0.8	22,700	
	0800	4,100	18	7.0	25			9.3	98	0.7	19,400	
	1155	4,100	19	7.2	26			10.0	106	1.5	41,500	
	1955	4,000	20	7.0	25			9.5	103	0.9	24,300	
	2320	4,000	20	7.1	26			9.3	101	0.5	13,500	
5-3	0755	3,900	20	7.3	26			8.6	93	2.4	63,200	
	1155	3,900	21	7.5	27			9.2	102	3.9	102,700	
	1945	4,100	22	7.2	26			9.1	103	0.6	16,600	
	2355	8,600	20	7.2	26			8.9	97	0.8	46,400	
5-4	0400	9,850	22	7.3	26			8.5	97	1.3	86,400	
	0800	9,850	20	6.8	26			8.5	92	1.0	66,500	
5-8	0010	9,200	16	7.0	26			9.6	96	1.1	66,310	
	0355	8,600	16	7.3	26			9.3	93	1.1	63,900	
5-8	0800	6,250	16	7.0	27			9.5	95	0.8	33,800	
	1200	4,500	18	7.2	26			9.6	101	1.3	39,500	
	1550	3,600	20	7.1	26			9.9	108	1.0	24,300	
	2000	2,800	20	7.4	27			9.6	104	1.3	24,600	
	2345	2,560	20	7.4	28			8.9	97	1.3	22,500	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 37 - (Continued)

Collected Date 1954	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
5-9	0400	2,560	18	7.0	27			8.8	93	1.2	20,700	
	0800	2,480	18	6.6	26			8.9	94	0.7	11,700	
	1200	2,480	19	6.5	25			10.1	107	0.9	15,100	
	2015	2,400	18	7.3	27			9.9	104	0.9	14,600	
	2355	2,400	17	7.2	27			9.4	97	0.8	13,000	
5-10	0800	2,400	16	7.2	26			9.6	96	2.0	32,400	
	1205	2,320	18	7.1	23			10.8	114	0.8	12,500	
	1605	2,320	19	7.7	25			10.8	115	0.8	12,500	
	2040	2,320	17	7.4	26			10.4	107	1.0	15,700	
5-11	0010	2,880	17	7.0	28			9.7	100	0.7	13,600	
	0400	8,300	15	7.4	27			9.7	95	1.3	72,800	
	0815	8,900	16	7.3	27			9.8	98	1.6	96,100	
5-14	2400	10,200	16	7.2	27			9.9	99	1.0	68,900	
5-15	0400	9,200	13	7.2	27			9.8	92	1.2	74,500	
	0755	8,300	15	7.1	27			9.8	96	2.9	162,500	
	1235	6,380	15	7.1	27			10.2	100	1.1	47,400	
	1630	4,620	14	7.3	27			10.3	99	0.6	18,700	
	1950	3,800	15	7.2	27			10.1	99	0.7	18,000	
5-16	0015	2,880	15	7.3	27			10.0	98	2.4	46,700	
	0400	2,320	13	7.2	27			9.9	93	2.0	31,300	
	0750	1,970	14	7.2	26			9.9	95	1.0	13,300	
	1145	1,700	15	7.3	25			10.5	103	0.8	9,200	
	1650	1,560	20	7.5	24			11.4	124	1.0	10,500	
	2015	1,400	19	7.8	25			11.0	117	1.2	11,300	
5-17	0001	1,440	18	7.4	26			9.9	104	1.1	10,700	
	0845	1,140	17	7.3	27			9.6	99	0.8	6,200	
	1230	1,190	19	7.6	25			10.4	111	1.4	11,200	
	1615	1,140	20	8.2	25			11.1	121	1.3	10,000	
	2000	1,140	20	8.5	24			10.8	117	1.2	9,200	
5-18	0010	1,030	20	7.6	25			9.5	103	1.0	6,950	
	0800	5,250	20	7.0	20			9.1	99	1.8	63,800	
Avg.		4,570	18		26	4	29	9.7	102	1.2	37,500	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 37

Collected Date 1956	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B.O.D. 5 Day 20 °C	B.O.D. lbs./day at 25 °C	Coliform M.P.N. per 100 ml.
8-28	0615	1710	25					5.0	60	0.9	10,400	
8-29	0615	1720	24					5.1	60			
8-30	0715	1700	24					4.2	49			
8-31	0645	1540	23					4.7	54			
9-3	0645	1710	23					4.7	54	1.0	11,500	
9-4	0730	1330	24					4.4	52			
9-5	0615	1330	24					4.9	58	0.4	3,600	
9-6	0615	1330	24					4.7	55	0.7	6,300	
9-7	0630	1330	24					3.2	38	1.2	10,800	
9-10	0615	1790	23					5.3	61	1.4	16,900	
9-11	0645	6500	22					6.0	68	1.4	61,400	
9-12	0630	5120	22					6.4	73	1.1	38,000	
9-13	0620	6250	22					6.2	70	0.7	29,500	
9-14	0620	8300	22					6.5	74			
9-15	0620	1730	22					5.8	66	0.9	10,500	
9-16	0620	1720	22					5.8	66			
9-17	0630	9850	23					5.7	66	1.3	86,400	
9-18	0655	6250	23					6.4	74	0.2	8,400	
9-19	0625	13300	23					6.4	74	2.0	179,600	
9-20	0700	5880	22					5.9	67	0.4	15,900	
9-21	0635	5620	22					5.6	63			
Avg.		4100	23					5.4	62	1.0	34,900	

TABLE 6

ANALYTICAL RESULTS

STATION NO. 41

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-27	1445	430	16	8.0	59	9	20	6.2	62	5.9	17,200	93,000
10-28	1000	800	18	8.5	58	9	28	9.2	96	5.0	27,000	240,000
10-29	1550	870	16	8.8	64	8	18	4.8	48	6.6	38,800	91,000
11-2	1850	610	17	7.3	40	5	16	8.5	87	1.9	7,800	91,000
11-3	0600	520	12	7.8	42	3	22	6.1	56	3.2	11,200	91,000
Avg.		646	16		53	7	21	6.9	70	4.5	20,400	120,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-27	1445	40	45	<10	0.40	0.10	0.050	109	27	82
10-28	1000	16	130	<10	0.40	0.12	0.050	145	47	98
10-29	1550	27	120	<10	0.20	0.20	0.020	167	32	135
11-2	1850	27	105	<10	0.20	0.09	0.020	42	20	22
11-3	0600	35	71	<10	0.60	0.10	0.040	100	17	83
Avg.		29	94		0.36	0.12	0.036	113	29	84

TABLE 6

ANALYTICAL RESULTS

STATION NO. 42

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-27	1540	500	16	8.9	65	9	20	5.5	55	9.1	30,700	210,000
10-28	1000	750	18	9.0	55	6	28	8.8	92	5.9	29,900	150,000
10-29	1410	950	16	9.4	58	4	22	6.2	62	7.0	44,900	150,000
11-2	1900	600	17	9.1	50	5	20	9.8	101	4.7	19,000	430,000
11-3	0640	470	13	8.9	51	5	20	6.4	60	6.6	20,900	230,000
Avg.		654	16		56	6	22	7.3	74	6.7	29,100	230,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-27	1540	27	80	<10	0.40	0.14	0.030	128	20	108
10-28	1000	48	95	<10	0.20	0.13	0.030	114	27	87
10-29	1410	23	66	<10	0.30	0.06	0.040	110	18	92
11-2	1900	12	130	<10	0.40	0.05	0.050	105	30	75
11-3	0640	48	69	<10	0.30	0.09	0.010	122	17	105
Avg.		32	88		0.32	0.09	0.032	116	22	94

TABLE 6

ANALYTICAL RESULTS

STATION NO. 43

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-27	1330	830	16	7.3	31	3	22	8.3	83	3.0	16,800	240,000
10-28	0935	800	18	7.0	31	4	20	7.5	79	1.5	10,000	240,000
10-29	1510	1,080	16	7.2	31	5	22	6.2	62	2.7	32,800	93,000
11-2	1950	640	16	7.1	27	2	20	6.8	68	2.0	8,640	43,000
11-3	0730	930	14	7.2	29	3	24	9.5	92	1.8	11,300	24,000
Avg.		856	16		30	3	22	7.7	77	2.2	15,900	130,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-27	1330	40	71	<10	0.30	0.06	0.040	89	26	63
10-28	0935	25	65	49	0.20	0.03	0.030	73	5	68
10-29	1510	50	120	13	0.25	0.00	.0	97	53	44
11-2	1950	70	195	<10	0.25	0.13	0.020	92	21	71
11-3	0730	14	120	<10	0.10	0.05	0.100	92	24	68
Avg.		40	114		0.22	0.05	0.038	89	26	63

TABLE 6

ANALYTICAL RESULTS

STATION NO. 44

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-27	1255	810	15	7.3	29	2	20	9.6	95	1.7	9,300	43,000
10-28	1600	775	18	7.0	30	4	20	9.0	94	1.6	8,370	43,000
10-29	0815	1050	13	7.2	30	4	20	8.9	84	2.5	17,700	43,000
11-2	1055	620	18	7.1	29	4	22	9.0	94	2.1	8,700	24,000
11-11	1815	735	9	7.0	28	4	24	10.3	89	2.1	10,400	4,300
Avg.		798	15		29	4	21	9.4	91	2.0	10,900	31,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-27	1255	12	48	<10	0.25	0.09	0.010	92	5	87
10-28	1600	18	59	<10	0.20	0.02	0.030	63	7	56
10-29	0815	18	90	<10	0.25	0.05	0.050	87	24	63
11-2	1055	65	245	<10	0.20	0.09	0.010	96	25	71
11-11	1815	14	34	<10	0.30	0.00	0.020	67	6	61
Avg.		25	95		0.24	0.05	0.024	81	13	68

TABLE 6

ANALYTICAL RESULTS

STATION NO. 45

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-27	1200	770	16	7.4	31	2	22	9.5	95	2.3	14,600	23,000
10-28	1630	700	16	7.1	32	8	26	9.2	92	2.1	9,940	23,000
10-29	0745	1080	13	7.2	31	4	22	8.7	82	2.1	15,300	23,000
11-2	1130	630	18	7.3	31	2	24	9.7	102	2.2	9,390	23,000
11-11	1845	690	9	6.9	28	9	24	11.9	103	5.7	26,600	23,000
Avg.		754	14		31	5	24	9.8	95	2.9	15,200	23,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-27	1200	20	70	<10	0.30	0.08	0.030	81	28	53
10-28	1630	18	44	<10	0.20	0.00	.0	70	7	63
10-29	0745	32	70	<10	0.25	0.10	.0	82	30	52
11-2	1130	43	56	14	0.00	0.10	0.040	73	10	63
11-11	1845	10	26	<10	0.10	0.01	0.050	94	13	81
Avg.		25	53		0.17	0.06	0.024	80	18	62

TABLE 6

ANALYTICAL RESULTS

STATION NO. 46

Collected Date 1953	Time	Discharge cfs	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-28	1400		18	7.3	31	7	24	9.8	103	1.8		4,300
11-2	1155		17	7.7	36	3	26	10.3	106	2.8		15,000
11-3	1815		13	7.0	27	3	22	9.2	87	8.5		9,100
11-4	0830		13	8.1	78	4	20	8.5	80	1.9		23,000
11-5	1600		9	7.2	32	5	22	9.1	79	5.1		23,000
Avg.			14		41	4	23	9.4	91	4.0		15,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-28	1400	27	48	<10	0.40	0.08	0.020	91	10	81
11-2	1155	25	49	<10				71	7	64
11-3	1815	44		<10	0.20	0.09	0.010	74	10	64
11-4	0830	14	41	<10	0.20	0.17	0.030	77	00	77
11-5	1600	20	59		0.20	0.00	0.010	64	00	64
Avg.		26	49		0.25	0.09	0.017	75	5	70

TABLE 6

ANALYTICAL RESULTS

STATION NO. 47

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25°C	Coliform M.P.N. per 100 ml.
10-28	1345		18	7.2	30	2	20	9.9	104	2.9		9,100
10-29	1100		14	7.3	36	5	22	8.7	84	4.4		43,000
11-2	1600		18	8.1	43	4	22	11.0	115	1.3		910
11-3	1825		13	7.0	27	2	22	9.2	87	8.2		230,000
11-4	0845		13	8.0	60	4	22	7.0	66	4.5		43,000
Avg.			15		39	3	22	9.2	91	4.3		65,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-28	1345	23	36	<10	0.20	0.08	0.020	131	6	125
10-29	1100	57	145	<10	0.25	0.20	.0	64	35	29
11-2	1600	30	44	<10	0.10	0.10	0.050	90	6	84
11-3	1825	14	46	<10	0.20	0.15	0.050	67	2	65
11-4	0845	14	51	<10	0.30	0.01	0.040	82	2	80
Avg.		28	64		0.21	0.11	0.032	87	10	77

TABLE 6

ANALYTICAL RESULTS

STATION NO. 48

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-4	1030	222	14	7.2	38	4	22	9.6	93	1.7	2,550	23,000
11-5	1500	160	9	7.2	31	5	22	10.1	87	2.1	2,270	230,000
11-9	0830	186	5	7.2	31	3	22	12.1	95	2.2	2,700	360
11-12	1800	123	9	7.2	28	9	24	10.1	87	2.3	1,910	7,300
11-19	1430	156	11	7.2	34	5	24	11.5	104	2.2	2,320	43,000
Avg.		169	10		32	5	23	10.7	93	2.1	2,350	61,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-4	1030	23	54	<10	0.20	0.06	0.040	68	4	64
11-5	1500	20	59	<10	0.30	0.09	0.020	72	1	71
11-9	0830	10	41	<10	0.10	0.15	0.050	63	8	55
11-12	1800	18	36	<10	0.30	0.40	0.010	71	0	71
11-19	1430	18	51	<10	0.60	0.12	0.030	67	15	52
Avg.		18	48		0.30	0.16	0.030	68	5	63

TABLE 6

ANALYTICAL RESULTS

STATION NO. 51

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	0815	442	19	7.2	28	2	20	8.6	92	2.2	6,550	4,300
9-29	0700	409	20	6.7	25	1	18	8.1	88	1.8	4,960	2,400
10-7	1750	215	15	7.4	33	2	22	9.3	92	1.2	1,740	1,500
10-12	1520	249	16	7.2	28	2	18	9.6	96	1.4	2,360	4,300
10-13	2252	239	16	7.1	27	2	22	9.0	90	2.6	4,190	7,300
10-15	0602	232	15	7.1	29	1	20	8.8	87	2.2	3,440	2,400
10-16	1120	262	17	7.2	35	2	24	8.6	88	2.2	3,900	24,000
10-19	1205	266	17	7.2	31	2	22	8.8	90	2.8	5,040	2,400
10-21	1758	239	17	7.4	30	2	22	8.7	89	1.7	2,740	2,300
10-22	2252	215	16	7.4	30	2	26	8.8	88	0.5	726	4,300
Avg.		277	17		30	2	21	8.8	90	1.9	3,560	5,500

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	0815	225	510	<10	0.20	0.10	0.010	289	28	261
9-29	0700	115	290	<10	0.20	0.05	0.100	114	73	41
10-7	1750	43	130	<10	0.50	0.02	0.030	71	33	38
10-12	1520	15	51	<10	0.60	0.05	0.050	67	15	52
10-13	2252	23	54	<10	0.70	0.00	0.020	69	6	63
10-15	0602	25	70	<10	0.20	0.10	0.040	72	4	68
10-16	1120	35	95	11	0.25	0.20	.0	85	18	67
10-19	1205	25	68	<10	0.20	0.08	0.020	79	18	61
10-21	1758	20	59	<10	0.30	0.06	0.040	77	11	66
10-22	2252	32	48	<10	0.20	0.08	0.020	58	10	48
Avg.		56	138		0.34	0.07	0.030	98	22	76

TABLE 6

ANALYTICAL RESULTS

STATION NO. 52

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1630	427	22	7.0	24	1	16	8.1	92	0.8	2,310	9,300
9-29	0755	296	17	6.7	23	1	22	8.5	87	1.1	2,220	2,300
10-5	0950	199	18	7.3	29	2	18	7.4	78	0.8	1,070	15,000
10-7	0725	203	13	7.3	30	2	24	8.3	78	2.1	2,880	15,000
10-12	1420	279	16	7.2	26	1	22	9.5	95	0.8	1,510	4,300
10-13	1220	225	15	7.1	27	1	20	9.5	94	1.0	1,520	2,300
10-14	1830	194	15	7.1	27	1	20	8.7	86	1.0	1,310	23,000
10-16	1050	240	17	7.1	27	2	18	9.0	92	2.2	3,570	9,300
10-19	1230	240	17	7.1	28	2	22	9.0	92	1.1	1,780	4,300
10-21	0730	247	14	7.4	28	2	20	7.7	74	1.6	2,670	23,000
10-22	1222	230	18	7.3	24	2	24	8.7	91	1.5	2,330	1,500
Avg.		253	17		27	2	21	8.6	87	1.3	2,110	9,900

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1630									
9-29	0755	62	170	12	0.10	0.20	0.020	101	62	39
10-5	0950	35	95	<10	0.50	0.22	0.030	84	15	69
10-7	0725	43	95	<10	.0	0.07	0.030	78	21	57
10-12	1420	40	55	<10	0.80	0.05	0.050	74	39	35
10-13	1220	28	54	<10	0.70	.0	0.030	61	13	48
10-14	1830	23	69	<10	0.60	0.02	0.030	65	7	58
10-16	1050	27	69	10	0.20	0.10	0.050	73	20	53
10-19	1230	20	59	<10	0.25	0.13	0.020	71	21	50
10-21	0730	20	80	<10	0.20	0.08	0.020	35	19	16
10-22	1222	27	56	<10	0.20	0.04	0.010	65	11	54
Avg.		33	80		0.36	0.09	0.029	71	23	48

TABLE 6

ANALYTICAL RESULTS

STATION NO. 53

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1100	240	20	6.9	24	2	18	8.5	93	2.4	3,880	150,000
9-29	0840	150	17	6.9	23	2	20	8.5	87	2.0	2,020	91,000
10-1	1400	190	24	6.7	24	4	26	7.9	93	2.5	3,200	150,000
10-6	2258	150	16	7.3	28	2	20	8.8	88	1.2	1,220	4,300
10-8	1740	135	13	7.1	28	2	20	9.5	90	0.9	820	1,500
10-13	0358	155	14	6.8	24	2	22	9.3	90	1.1	1,150	7,300
10-14	1008	95	15	6.9	23	2	20	9.0	89	1.2	770	1,500
10-15	0630	135	16	7.1	25	2	20	9.2	92	1.1	1,000	9,100
10-19	1330	150	18	7.2	28	2	20	8.9	93	1.9	1,920	4,300
10-20	2250	170	18	7.2	29	2	20	8.6	90	2.5	2,870	4,300
10-22	0348	190	17	7.3	25	2	20	8.9	91	2.1	2,700	7,300
Avg.		160	17		26	2	21	8.8	91	1.7	2,000	39,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1100	80	280	<10	0.20	0.08	0.020	102	52	50
9-29	0840	48	95	<10	0.30	0.08	0.010	79	30	49
10-1	1400	23	59	<10	0.20	.0	.0	58	11	47
10-6	2258	35	69	<10	0.60	0.15	0.010	83	13	70
10-8	1740	20	31	316	0.20	0.03	0.020	779	8	771
10-13	0358	27	80	<10	0.40	0.20	0.040	62	14	48
10-14	1008	16	39	<10	.0	0.10	0.030	79	9	70
10-15	0630	28	78	<10	0.20	0.07	0.030	68	7	61
10-19	1330	18	51	65	0.20	0.17	0.020	95	11	84
10-20	2250	20	65	<10	0.25	0.13	0.020	78	14	64
10-22	0348	35	64	11	0.20	0.10	.0	75	13	62
Avg.		32	83		0.25	0.10	0.018	142	17	125

TABLE 6

ANALYTICAL RESULTS

STATION NO. 54

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1130	230	20	7.0	24	1	20	8.5	93	0.7	1,090	230
9-29	0953	130	17	6.8	22	1	22	8.8	90	0.5	438	2,300
10-1	1430	150	23	7.0	24	1	18	8.1	93	0.8	810	4,300
10-6	1948	200	16	7.2	26	1	20	8.7	87	1.1	1,490	930
10-8	1720	140	14	7.1	26	1	26	10.2	98	0.6	566	730
10-13	0048	150	13	7.2	24	1	20	9.1	86	2.0	2,030	910
10-14	0658	130	14	7.1	25	1	20	9.3	90	0.9	790	910
10-15	0745	90	16	7.1	27	1	20	8.4	84	1.8	1,090	730
10-19	1310	140	18	7.1	26	2	22	8.7	91	2.7	2,560	230
10-20	1948	145	18	7.0	26	2	22	8.6	90	0.7	685	910
10-22	0048	175	17	7.3	23	2	26	8.8	90	2.4	2,840	430
Avg.		153	17		25	1	21	8.8	90	1.3	1,310	1,100

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1130	67	245	<10	0.30	0.08	0.020	89	38	51
9-29	0953	57	130	<10	0.30	.0	0.020	80	12	68
10-1	1430	20	56	<10	0.20	0.13	0.020	59	9	50
10-6	1948	23	59	<10	0.10	0.08	0.020	66	9	57
10-8	1720	27	59	<10	0.10	0.02	0.030	48	12	36
10-13	0048	30	45	57	0.30	0.07	0.030	122	30	92
10-14	0658	20	49	<10	0.10	0.21	0.010	57	4	53
10-15	0745	16	41	<10	0.10	0.10	0.040	62	12	50
10-19	1310	27	70	<10	0.20	0.07	0.040	60	17	43
10-20	1948	23	54	<10	0.20	0.14	0.100	61	9	52
10-22	0048	20	80	<10	0.30	0.12	0.030	70	11	59
Avg.		30	81		0.20	0.09	0.033	70	15	56

TABLE 6

ANALYTICAL RESULTS

STATION NO. 55

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1230	202	20	7.0	21	2	16	8.5	93	1.6	2,180	2,300
9-29	1030	115	18	6.8	21	2	18	9.1	95	1.7	1,320	2,300
10-1	1700	117	23	7.1	20	2	16	8.0	92	0.7	550	2,300
10-5	1420	37	19	7.3	22	2	18	8.7	93	0.8	200	930
10-6	1225	113	18	7.2	26	2	20	4.4	46	0.8	610	2,300
10-7	1050	206	14	7.2	26	1	24	7.8	75	2.5	3,480	730
10-12	1724	119	12	7.1	23	2	22	9.3	86	0.9	726	730
10-13	2334	91	16	7.1	25	1	20	9.0	90	1.0	614	4,300
10-15	0800	115	15	7.1	24	2	22	9.2	91	2.2	1,710	9,100
10-20	1230	80	15	7.1	24	2	16	8.7	86	1.9	1,200	2,300
10-21	1724	135	17	7.3	23	2	20	8.6	88	1.2	1,090	4,300
Avg.		121	17		23	2	19	8.3	85	1.4	1,240	2,900

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1230	57	130	<10	0.20	0.22	0.020	101	40	61
9-29	1030	20	80	11	0.30	0.05	0.100	84	7	77
10-1	1700	16	54	<10	0.10	0.09	0.010	60	8	52
10-5	1420	30	64	<10	.0	.0	0.010	64	8	56
10-6	1225	20	44	<10	0.20	0.09	0.010	68	1	67
10-7	1050	23	64	<10	0.50	0.05	.0	76	2	74
10-12	1724	18	49	<10	0.80	0.02	0.030	56	0	56
10-13	2334	25	48	338	0.40	0.01	0.040	1808	12	1796
10-15	0800	25	66	<10	0.10	0.07	0.030	67	0	67
10-20	1230	20	59	<10	0.25	0.08	0.010	58	16	42
10-21	1724	12	41	<10	0.20	0.08	0.020	66	10	56
Avg.		24	64		0.28	0.07	0.026	228	9	219

TABLE 6

ANALYTICAL RESULTS

STATION NO. 56

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1300	75	20	7.0	17	1	18	8.6	94	1.3	660	91
9-29	1050	100	18	6.8	18	1	16	9.0	94	1.3	880	2,400
10-1	1615	60	25	7.0	21	1	20	8.5	101	0.7	282	230
10-5	1440	60	18	7.3	25	1	16	8.0	84	0.5	204	4,300
10-6	0715	105	14	7.2	22	1	20	3.9	38	1.7	1210	930
10-7	1030	60	14	7.2	23	1	20	8.8	85	1.3	528	4,300
10-12	1200	50	15	7.2	22	1	18	9.7	96	1.1	370	91
10-13	1810	135	17	7.1	21	1	20	9.2	94	0.9	824	430
10-20	0700	60	14	7.4	23	2	24	9.3	89	0.6	246	150
10-21	1200	115	18	7.1	20	1	18	5.0	52	1.4	1090	430
Avg.		82	17		21	1	19	8.0	83	1.1	630	1,300

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1300	27	95	<10	0.100	.0	0.030	89	9	80
9-29	1050	37	95	<10	0.100	0.20	0.020	63	24	39
10-1	1615	20	51	<10	0.200	.0	0.030	32	10	22
10-5	1440	23	66	<10	0.100	.0	0.010	66	7	59
10-6	0715	20	56	<10	0.200	0.08	0.030	53	0	53
10-7	1030	35	65	<10	.0	0.09	0.010	58	15	43
10-12	1200	20	46	<10	0.200	0.01	0.040	47	7	40
10-13	1810	20	46	<10	0.200	0.08	0.030	63	9	52
10-20	0700	27	47	<10	0.250	0.10	0.020	74	12	62
10-21	1200	18	71	<10	0.400	0.10	0.020	64	15	49
Avg.		25	64		0.180	0.07	0.024	61	11	50

TABLE 6

ANALYTICAL RESULTS

STATION NO. 57

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B.O.D. 5 Day 20° C	B.O.D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1530	130	20	7.3	17	1	22	8.8	96	1.7	1,150	430
9-30	0915	105	17	6.9	18	3	24	9.2	94	1.1	777	2,400
10-6	1015	90	17	7.1	19	2	20	8.7	89	1.4	935	20,000
10-8	1620	70	14	7.1	18	1	16	10.4	100	2.8	1,320	36
10-12	1310	75	15	7.2	18	2	16	9.9	98	1.2	608	230
10-15	0825	105	15	7.1	19	2	20	9.9	98	2.1	1,490	2,400
10-20	1300	120	19	6.9	21	1	26	9.1	97	0.8	648	930
10-21	1020	105	16	7.1	20	1	16	13.7	138	1.6	1,080	230
10-22	1540	120	17					9.1	93	2.0	1,620	930
11-3	1020	125	12	7.3	27	2	20	8.8	81	0.7	587	430
Avg.		104	16		20	2	20	9.8	98	1.5	1,013	2,800

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1530	23	56	<10	.0	.0	0.030	59	1	58
9-30	0915	25	69	11	0.40	0.12	0.030	103	12	91
10-6	1015	23	56	<10	0.50	0.22	0.030	50	0	50
10-8	1620	18	61	<10	0.20	0.06	0.050	48	12	36
10-12	1310	18	34	<10	0.70	0.07	0.030	42	2	40
10-15	0825	28	51	<10	0.10	0.03	0.020	33	0	33
10-20	1300	20	46	<10	0.30	0.15	0.050	52	5	47
10-21	1020	12	48	<10	0.20	0.10	0.020	55	0	55
10-22	1540	25	64	<10	0.35	0.09	0.010	56	12	44
11-3	1020	18	51	<10	.0	.0	0.030	54	0	54
Avg.		21	54		0.28	0.08	0.030	55	4	51

TABLE 6

ANALYTICAL RESULTS

STATION NO. 58

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
10-20	1330	62	19	7.1	20	2	24	9.7	104	3.9	1,630	930
10-21	0940	61	15	7.1	18	1	20	9.6	95	1.2	494	730
10-22	1500	83	17					8.5	87	1.7	955	730
11-3	1150	68	11	7.1	28	2	20	10.5	95	1.4	646	36
Avg.		68	15		22	2	21	9.6	93	2.0	934	610

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
10-20	1330	30	34	<10	0.40	0.10	0.050	51	6	45
10-21	0940	18	39	<10	0.20	0.07	0.030	47	5	42
10-22	1500	25	59	<10	0.20	0.08	0.030	47	10	37
11-3	1150	12	44	<10	0.10	0.01	0.040	48	1	47
Avg.		21	44		0.22	0.06	0.037	48	5	43

TABLE 6

ANALYTICAL RESULTS

STATION NO. 61

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1030	160	20	7.0	25	1	20	8.0	87	2.9	3,130	2,400
9-30	0930	81	21	7.1	26	1	24	8.0	89	2.2	1,200	24,000
10-6	1400	68	18	7.3	32	1	24	4.8	50	2.4	1,100	43,000
10-7	1230	84	15	7.2	32	1	22	8.9	88	2.7	1,530	43,000
10-8	1730	69	14	7.4	31	1	32	8.4	81	1.2	558	15,000
10-13	0410	73	14	7.2	28	2	24	9.3	90	1.4	690	7,300
10-20	2300	70	16	7.0	30	1	30	7.8	78	6.0	2,840	2,100
10-22	0340	60	17	7.3	24	1	22	7.3	75	1.9	769	9,300
Avg.		83	17		28	1	25	7.8	80	2.6	1,480	18,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1030	54	145	<10	.0	0.02	0.040	95	22	73
9-30	0930	46	105	<10	0.20	0.08	0.020	82	19	63
10-6	1400	23	54	<10	0.50	.0	0.040	123	21	102
10-7	1230	30	45	<10	0.50	0.01	0.040	137	24	113
10-8	1730	43	105	<10	0.20	0.07	0.030	76	15	61
10-13	0410	32	80	<10	0.30	0.10	0.020	78	12	66
10-20	2300	25	80	<10	0.20	0.10	0.020	67	14	53
10-22	0340	32	65	<10	0.20	.0	0.030	65	9	56
Avg.		36	85		0.26	0.05	0.030	90	17	73

TABLE 6

ANALYTICAL RESULTS

STATION NO. 62

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1015	155	20	7.0	25	2	24	7.3	80	0.9	942	930
9-30	0955	80	18	6.9	25	2	26	7.0	73	2.1	1,030	730
10-6	1420	65	18	7.2	29	1	20	7.1	74	1.4	614	1,500
10-7	1355	80	16	7.2	32	1	22	8.6	86	1.0	540	150
10-8	1800	65	13	7.2	28	1	22	9.5	90	1.4	614	36
10-14	0800	70	14	6.9	26	1	20	8.2	79	0.3	142	2,400
10-20	1715	70	18	7.0	29	2	30	7.6	80	4.4	2,080	730
Avg.		83	17		28	1	23	7.9	80	1.6	852	930

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1015	42	145	<10	0.10	0.03	0.030	83	27	56
9-30	0955	32	130	<10	0.50	0.33	0.030	75	31	44
10-6	1420	48	95	<10	0.40	0.06	0.040	101	13	88
10-7	1355	35	130	<10	0.20	0.07	0.030	85	20	65
10-8	1800	35	80	<10	.0	.0	0.020	65	13	52
10-14	0800	32	45	<10	0.70	0.10	0.050	82	19	63
10-20	1715	20	90	<10	0.20	0.10	0.010	80	13	67
Avg.		35	102		0.30	0.10	0.030	81	19	62

TABLE 6

ANALYTICAL RESULTS

STATION NO. 63

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	0955	96	20	7.1	25	2	24	8.7	95	1.2	777	430
10-1	1300	74	23	7.0	25	1	22	8.2	94	1.0	499	230
10-5	1130	66	18	7.3	25	1	16	8.6	90	1.2	535	230
10-6	1655	48	18	7.2	28	1	20	8.6	90	0.7	227	2,400
10-7	1400	53	18	7.3	29	1	24	9.5	100			930
10-14	0605	82	14	7.1	25	1	20	9.3	90	3.6	1990	930
10-20	2015	100	18	7.1	28	2	32	8.3	87	4.8	3240	230
Avg.		74	18		26	1	23	8.7	92	2.1	1210	770

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	0955	48	145	<10	0.20	.0	0.040	107	43	64
10-1	1300	16	70	<10				72	0	72
10-5	1130	32	70	<10	0.20	0.08	0.020	82	11	71
10-6	1650	28	66	<10	0.10	.0	0.010	91	2	89
10-7	1400	20	51	<10	0.40	0.27	0.030	76	11	65
10-14	0605	40	71	337				1733	15	1718
10-20	2015	18	46	<10	0.30	0.08	0.020	65	11	54
Avg.		29	74		0.24	0.09	0.024	318	13	305

TABLE 6

ANALYTICAL RESULTS

STATION NO. 64

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	0925	123	18	7.1	24	2	22	9.1	95	2.0	1,660	730
10-1	1230	86	21	7.2	24	1	18	9.3	103	1.3	765	730
10-5	1030	81	18	7.4	28	1	16	9.7	102	1.5	818	730
10-6	1620	83	18	7.3	27	1	20	9.1	95	1.1	614	430
10-7	1515	85	17	7.5	27	1	24	10.5	108	1.2	689	2,100
10-14	0645	80	14	7.2	25	1	22	8.4	81	1.0	540	230
10-21	1700	86	18	7.3	24	2	22	8.3	87	1.8	1,040	430
Avg.		89	18		26	1	21	9.2	97	1.4	875	770

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	0925				0.20	0.00	0.030			
10-1	1230	30	80	<10	0.10	0.02	0.030	62	10	52
10-5	1030	25	64	<10	0.30	0.07	0.030	74	14	60
10-6	1620	30	70	<10	0.40	0.45	0.050	86	7	79
10-7	1515	20	49	<10	0.60	0.15	0.050	69	6	63
10-14	0645	37	44	343	0.60	0.35	0.020	2356	4	2352
10-21	1700	30	64	<10	0.20	0.09	0.260	76	12	60
Avg.		29	62		0.34	0.16	0.067	454	9	444

TABLE 6

ANALYTICAL RESULTS

STATION NO. 65

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-11	1130	2.3	9	6.4	26	17	42	6.8	59	2.4	45	430
11-12	1430	2.5	9	6.3	30	16	40	7.1	61	1.5	25	430
11-13	0815	2.2	7	6.4	24	16	32	6.6	54	0.8	12	430
11-17	1720	2.0	12	6.6	31	15	23	6.4	59	0.8	11	290
Avg.		2.3	9		28	16	34	6.7	58	1.4	23	390

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-11	1130	14	120	<10	0.30	0.48	0.020	108	7	101
11-12	1430	14	105	<10	0.30	0.08	0.020	85	1	84
11-13	0815	14	120	<10	0.20	0.06	0.015	88	6	82
11-17	1720	13	71	<10	0.10	0.10	0.050	95	5	90
Avg.		14	104		0.23	0.18	0.026	94	5	89

TABLE 6

ANALYTICAL RESULTS

STATION NO. 71

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B.O.D. 5 Day 20° C	B.O.D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1415	70	21	7.1	33	2	24	8.3	92	1.2	567	7,300
9-30	0805	15	12	7.1	36	2	28	9.0	83	1.7	173	7,300
10-5	1230	19	19	7.4	40	1	20	8.6	92	1.0	128	150
10-6	0810	18	14	7.3	40	2	36	4.9	47	2.0	243	15,000
10-7	1100	18	14	7.4	41	2	28	9.2	89	1.4	171	9,300
10-8	1650	11	14	7.2	39	1	32	9.6	93	1.4	104	24,000
10-20	1600	18	18	7.2	42	2	32	10.1	106	3.3	401	43,000
10-21	1100	18	16	7.2	41	2	32	9.0	90	1.7	207	93,000
Avg.		22	16		39	2	29	8.6	88	1.7	249	25,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1415	48	145	<10	0.25	0.08	0.020	88	13	75
9-30	0805	23	56	15	0.40	0.05	0.100	62	8	54
10-5	1230	37	85	<10	0.40	0.17	0.030	120	41	79
10-6	0810	20	49	<10	0.20	0.42	0.030	87	5	82
10-7	1100	23	44	<10	0.30	0.02	0.030	68	10	58
10-8	1650				0.10	.0	0.020			
10-20	1600	37	180	<10	0.30	0.10	0.050	84	12	72
10-21	1100	16	44	<10	0.20	.0	0.030	81	12	69
Avg.		29	76		0.27	0.10	0.039	84	14	70

TABLE 6

ANALYTICAL RESULTS

STATION NO. 72

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
9-28	1435	70	21	7.1	33	2	24	8.3	92	1.0	473	9,300
9-30	0750	15	12	7.1	35	2	30	9.4	87	1.6	162	430
10-5	1300	19	19	7.4	39	1	26	8.5	91	0.8	103	4,300
10-6	0820	18	15	7.3	39	1	34	8.4	83	2.1	256	430
10-7	1130	18	15	7.4	40	1	28	8.5	84	1.3	158	230
10-8	1700	11	14	7.2	39	1	34	9.5	92	1.6	119	930
10-20	1620	18	18	7.2	40	2	28	8.3	87	0.5	61	4,300
10-21	1100	18	16	7.2	42	2	24	7.1	71	1.3	158	730
Avg.		23	16		38	1	28	8.5	86	1.3	186	2,600

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
9-28	1435	35	145	<10	0.20	.0	0.020	117	16	101
9-20	0750	32	56	<10	0.20	0.09	0.010	60	9	51
10-5	1300	50	120	<10	0.40	0.70	0.030	124	29	95
10-6	0820	20	44	<10	0.30	0.10	0.100	73	0	73
10-7	1130	12	24	<10	0.20	0.07	0.030	72	2	70
10-8	1700	18	36	<10	0.20	0.09	0.050	67	6	61
10-20	1620	12	41	<10	0.20	0.08	0.030	75	8	67
10-21	1100	25	51	11	0.20	0.09	0.020	81	18	63
Avg.		25	65		0.24	0.15	0.036	84	11	73

TABLE 6

ANALYTICAL RESULTS

STATION NO. 73

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-12	1315	7.2	8	6.9	50	38	48	11.2	94	3.0	146	910
11-16	1100	7.0	9	7.0	54	109	56	4.7	41	1.6	76	910
11-18	1900	4.5	7	7.0	53	115	56	11.4	94	2.0	61	43,000
11-24	0745	9.3	13	6.9	45	48	36	6.8	64	2.0	126	4,300
Avg.		7.0	9		50	77	49	8.5	73	2.1	102	12,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-12	1315	15	45	<10	0.30	0.15	0.050	246	1	245
11-16	1100	32	59	<10	2.00	0.10	.0	282	2	280
11-18	1900	20	41	<10	2.00	0.13	0.020	293	14	279
11-24	0745	12	51	<10	2.00	0.12	0.030	196	8	188
Avg.		20	49		1.57	0.12	0.025	254	6	248

TABLE 6

ANALYTICAL RESULTS

STATION NO. 74

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-12	1230	2.0	8	6.9	44	5	40	10.8	91	1.9	26	230
11-16	1330	1.6	10	7.2	40	5	32	7.7	68	1.1	12	430
11-18	1830	15.0	7	6.9	42	5	44	10.9	90	1.6	162	730
11-24	0935	2.0	13	6.9	43	4	36	7.7	73	0.6	8	4,300
Avg.		5.1	9		42	5	38	2.3	80	1.3	52	1,400

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2-	Solids Total	Solids Suspended	Solids Dissolved
11-12	1230	10	26	<10	0.40	0.18	0.020	67	6	61
11-16	1330	14	31	<10	0.40	0.05	0.100	74	3	71
11-18	1830	12	56	<10	0.60	0.08	0.020	105	24	81
11-24	0935	70	155	<10	0.90	0.07	0.030	129	54	75
Avg.		26	67		0.57	0.09	0.043	94	22	72

TABLE 6

ANALYTICAL RESULTS

STATION NO. 74-A

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-16	1300	4.0	10	7.1	38	5	40	9.5	84	1.6	43	36
11-18	1810	7.0	8	6.9	40	5	38	11.0	93	0.9	43	150
11-24	1000	7.0	13	6.9	41	5	46	4.9	46	1.5	71	3.6
Avg.		6.0	10		40	5	41	8.5	74	1.3	52	63

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-16	1300	5	16	<10	0.90	0.10	0.030	87	0	87
11-18	1810	4	21		0.70	0.08	0.020	87	9	78
11-24	1000	6	29	<10	0.40	0.10	0.050	87	5	82
Avg.		5	22		0.67	0.09	0.033	87	5	82

TABLE 6

ANALYTICAL RESULTS

STATION NO. 75

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-12	1140	2.6	10	7.1	84	360	30	5.4	48	6.2	109	4,300
11-16	1345	2.2	10	7.2	82	315	74	6.4	56	4.0	59	3,000
11-18	1730	2.7	9	7.2	85	308	46	6.5	55	4.1	75	930
11-24	1020	3.4	14	6.9	62	202	52	3.6	35	2.3	53	7,300
Avg.		2.7	11		78	296	50	5.5	48	4.1	74	3,900

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-12	1140	18	195	<10	6.00	0.14	0.010	782	5	777
11-16	1345	10	80	<10	6.00	0.20	0.010	680	2	678
11-18	1730	20	120	<10	2.00	0.18	0.030	664	8	656
11-24	1020	23	195	<10	5.00	0.30	0.040	477	13	464
Avg.		18	147		4.8	0.21	0.022	651	7	644

TABLE 6

ANALYTICAL RESULTS

STATION NO. 76

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-12	1105	2.0	10	6.7	64	135	24	3.4	30	45.5	614	430,000
11-16	1415	2.3	10	6.8	96	371	52	0.2	2	78.1	1,210	24,000,000
11-18	1715	2.2	16	6.9	79	234	46	0.6	6	118.4	1,760	2,400,000
11-24	1035	2.4	16	6.8	56	117	28	3.4	34	19.6	317	24,000,000
Avg.		2.2	13		74	214	37	1.9	18	65.4	975	13,000,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-12	1105	23	180	<10	3.00	0.25	0.010	383	23	360
11-16	1415	70	280	<10	5.00	0.45	0.040	913	76	837
11-18	1715	60	270	<10	10.00	0.27	0.030	585	55	530
11-24	1035	25	26	<10	2.00	0.20	0.100	347	22	325
Avg.		44	189		5.00	0.29	0.045	557	44	513

TABLE 6

ANALYTICAL RESULTS

STATION NO. 77

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C lbs./day at 25° C		Coliform M.P.N. per 100 ml.
11-12	1045	0.3	9	6.7	27	7	20	11.6	100	2.6	5.3	24,000
11-16	1530	0.02	8	7.1	26	7	22	10.3	87	1.9	0.3	43,000
11-18	1700	0.4	11	6.9	26	11	26	10.2	92	1.5	4.0	24,000
11-24	1050	0.7	15	6.9	30	8	26	5.9	58	1.4	6.7	2,100,000
Avg.		0.35	11		27	8	23	9.5	84	1.8	4.1	550,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Suspended	Dissolved
11-12	1045	18	46	<10	0.40	0.18	0.020	86	0	86
11-16	1530	32	54	<10	0.30	0.10	0.010	79	4	75
11-18	1700	14	54	<10	2.50	0.12	0.030	96	21	75
11-24	1050	37	145	<10	0.80	0.15	0.050	118	21	97
Avg.		25	75		1.00	0.14	0.028	95	11	83

TABLE 6

ANALYTICAL RESULTS

STATION NO. 81

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-5	0825	5.5	9	7.0	27	5	38	7.9	68	2.2	81	4,300
11-10	1400	6.7	7	7.3	44	4	32	8.1	67	1.4	63	2,400
11-11	1105	6.3	6	7.1	44	4	28	9.6	77	2.2	94	4,300
11-16	1600	7	8	7.2	42	5	44	11.3	95	1.1	52	430
Avg.		6.4	7		39	4	35	9.2	77	1.7	72	2,900

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-5	0825	12	34	<10	0.80	0.07	0.030	98	1	97
11-10	1400	14	39	<10	0.10	0.05	0.100	88	0	88
11-11	1105	15	36	<10	0.20	.0	0.040	87	0	87
11-16	1600	5	24	<10	0.40	0.35	0.050	111	0	111
Avg.		11	33		0.37	0.12	0.055	96	0	96

TABLE 6

ANALYTICAL RESULTS

STATION NO. 82

Collected Date 1953	Collected Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-5	0705	5.4	9	7.0	26	4	34	7.3	63	0.8	29	930
11-10	1345	6.1	7	7.1	41	4	38	8.5	70	1.1	45	73
11-11	1135	6.2	5	7.0	40	4	32	12.2	95	1.0	42	150
11-16	1620	6.8	8	7.2	39	5	38	11.5	97	1.0	46	91
Avg.		6.1	7		36	4	35	9.9	81	1.0	40	310

Collected Date 1953	Collected Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-5	0705	12	34	<10	0.60	0.06	0.040	102	1	101
11-10	1345	10	16	<10	0.20	0.10	0.100	89	0	89
11-11	1135	15	24	<10	0.20	.0	0.020	98	0	98
11-16	1620	30	36	<10	0.30	0.05	0.100	102	3	99
Avg.		17	28		0.33	0.05	0.065	98	1	97

TABLE 6

ANALYTICAL RESULTS

STATION NO. 83

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-5	1120		8	7.3	53	2	54	11.0	93	2.1		930
11-10	1225		3	7.1	46	2	36	10.4	77	1.8		240
11-11	0750		3	7.0	45	2	29	7.3	54	1.6		240
11-19	1645		9	7.3	42	3	26	10.3	89	1.5		430
Avg.			6		47	2	36	9.8	78	1.8		460

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-5	1120	20	41	<10	0.10	0.05	0.050	82	1	81
11-10	1225	5	26	<10	.0	.0	0.030	80	0	80
11-11	0750	8	36	<10	0.10	.0	0.040	83	0	83
11-19	1645	10	41	<10	0.50	0.47	0.030	86	5	81
Avg.		11	36		0.18	0.13	0.038	83	2	81

TABLE 6

ANALYTICAL RESULTS

STATION NO. 83-A

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-10	1100	6.8	3	7.3	40	5	30	10.0	74	1.6	73	430
11-11	0845	8.4	3	7.1	40	4	33	3.4	25	2.2	124	240
11-17	1630	8.8	7	7.1	39	5	28	12.5	103	2.0	119	430
11-19	1915	9.5	7	7.4	33	4	26	11.4	94	0.9	58	93
Avg.		8.7	5		38	5	29	9.3	74	1.7	93	300

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-10	1100	14	49	<10	.0	0.05	0.040	91	0	91
11-11	0845	20	44	<10	0.20	0.06	0.040	88	0	88
11-17	1630	12	41	<10	0.40	0.70	0.010	86	5	81
11-19	1915	10	41	<10	0.60	0.07	0.030	99	7	92
Avg.		14	44		0.30	0.22	0.030	91	3	88

TABLE 6
ANALYTICAL RESULTS

STATION NO. 83-B

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-23	1430	3.3	19	6.9	90	16	32	0.2	2	42.2	940	7,300,000
11-23	2025	2.7	17	6.9	87	16	32	0.7	7	33.4	607	910,000
11-24	0615	2.5	12	6.7	66	12	74	2.5	23	12.8	216	430,000
11-24	1330	2.8	15	6.8	87	15	66	0.7	7	45.0	850	240,000,000
Avg.		2.8	16		83	15	51	1.0	10	33.4	653	62,000,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-23	1430	23	155	<10	5.00	0.10	0.050	174	48	126
11-23	2025	20	80	<10	5.00	0.05	0.050	168	26	142
11-24	0615	15	66	<10	4.00	0.08	0.020	115	4	111
11-24	1330	20	90	<10	5.00	0.13	0.020	165	20	145
Avg.		20	98		4.75	0.09	0.035	156	25	131

TABLE 6

ANALYTICAL RESULTS

STATION NO. 54

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-5	0945	1.0	9	7.1	31	2	36	10.2	88	2.1	14	1,500
11-10	1135	1.2	3	7.2	35	3	26	9.5	70	1.6	13	4,300
11-11	1400	1.3	7	7.0	33	2	40	11.6	95	1.5	13	230
11-17	1530	1.3	9	6.9	32	3	22	10.8	93	1.5	13	1,500
11-19	1700	0.6	10	7.3	30	3	24	10.3	91	1.4		930
Avg.		1.1	8		32	3	30	10.5	87	1.6	13	1,700

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-5	0945	12	66	<10	0.20	0.16	0.040	109	17	92
11-10	1135	12	41	<10	0.10	.0	0.040	98	0	89
11-11	1400	10	26	<10	0.10	.0	0.040	81	20	61
11-17	1530	28	39	<10	0.20	0.22	0.030	77	10	67
11-19	1700	10	44	<10	0.70	0.07	0.030	92	9	86
Avg.		14	43		0.26	0.09	0.040	90	11	78

TABLE 6

ANALYTICAL RESULTS

STATION NO. 85

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-10	1238	1.5	3	7.2	44	5	50	10.4	77	0.3	3	2,300
11-11	0820	1.5	3	7.1	45	6	38	9.1	67	1.8	18	910
11-17	1600	1.5	9	6.9	42	5	46	11.0	95	1.9	19	150
11-19	1725	1.5	9	7.3	43	5	36	10.3	89	1.2	12	430
Avg.		1.5	6		44	5	43	10.2	82	1.3	13	940

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-10	1238	10	36	<10	0.1	0.30	0.020	105	2	103
11-11	0820	14	39	<10	0.1	1.0	0.020	112	2	110
11-17	1600	52	66	<10	1.0	0.24	0.010	105	16	89
11-19	1725	18	54	<10	0.2	0.90	0.050	103	14	89
Avg.		24	49		0.35	0.61	0.002	106	9	98

TABLE 6

ANALYTICAL RESULTS

STATION NO. 85-A

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-5	0730	7.6	9	7.2	32	4	42	8.6	74	1.6	82	36
11-10	1440	8.8	9	7.0	29	5	30	11.2	97	1.2	71	93
11-11	1030	8.8	6	7.2	29	5	28	12.2	98	1.2	71	430
11-19	1840	10	7	7.2	32	7	30	11.5	94	1.1	74	36
Avg.		8.8	8		31	5	33	10.9	91	1.3	74	150

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-5	0730	12	24	<10	0.40	0.08	0.020	68	14	54
11-10	1440	15	26	<10	0.10	0.05	0.050	90	0	90
11-11	1030	14	21	<10	0.20	.0	0.040	87	2	85
11-19	1840	20	26	<10	0.80	0.10	0.0	89	3	86
Avg.		15	24		0.38	0.06	0.025	84	4	79

TABLE 6

ANALYTICAL RESULTS

STATION NO. 86

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-4	1330	0.18	13	7.2	38	2	22	9.5	90	1.3	2	230
11-9	1055	0.21	5	7.1	37	2	30	12.4	97	1.0	1	930
11-17	0810	0.21	4	6.9	35	2	38	9.2	70	2.5	4	730
11-23	1830	0.4	13	6.9	36	2	36	9.0	85	2.7	7	93
Avg.		0.25	9		37	2	32	10.0	86	1.9	3	500

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-4	1330	12	49	<10	0.2	0.06	0.040	75	0	75
11-9	1055	23	70	<10	0.3	0.04	0.010	56	3	53
11-17	0810	37	49	<10	0.35	0.50	0.010	151	88	63
11-23	1830	32	130	<10	0.70	0.15	.0	127	66	61
Avg.		26	75		0.39	0.19	0.010	102	39	63

TABLE 6

ANALYTICAL RESULTS

STATION NO. 86-A

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-4	1350	0.2	13	7.2	38	2	22	9.9	93	1.2	2	3.6*
11-9	1055	0.2	5	7.2	37	2	26	12.3	96	2.8	4	73
11-17	0805	0.2	4	7.0	35	2	38	9.4	72	2.1	3	210
11-23	1830	0.4	13	6.9	37	2	37	8.8	83	2.7	7	73
Avg.		0.2	9		37	2	31	10.1	86	2.2	4	120

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-4	1350	12	59	<10	0.80	0.17	0.030	84	0	84
11-9	1055	23	65	<10	0.20	0.09	0.010	112	14	98
11-17	0805	32	95	<10	0.35	0.30	0.010	108	36	72
11-23	1830	37	180	<10	1.00	0.27	0.030	142	72	70
Avg.		26	100		0.59	0.21	0.020	112	31	81

* Excluded from average

TABLE 6

ANALYTICAL RESULTS

STATION NO. 87

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-4	1415	0.3	12	7.0	36	2	20	8.5	78	1.4	3	430
11-9	1040	0.3	3	7.0	40	2	24	11.9	88	1.4	3	730
11-10	0815	0.3	6	7.0	38	2	28	8.4	67	1.4	3	730
11-23	1815	0.4	14	6.9	37	2	26	6.5	63	2.3	6	43,000
Avg.		0.3	9		38	2	25	8.8	74	1.6	4	11,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-4	1415	12	51	<10	0.30	0.06	0.050	86	0	86
11-9	1040	12	41	<10	0.20	0.04	0.020	82	0	82
11-10	0815	12	41	<10	0.20	0.05	0.050	77	0	77
11-23	1815	18	85	<10	0.80	0.07	0.100	93	16	77
Avg.		14	55		0.38	0.06	0.055	85	4	81

TABLE 6

ANALYTICAL RESULTS

STATION NO. 87-A

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-4	1430	1.6	11	7.2	38	2	20	9.9	89	1.4	15	430
11-9	1030	1.7	3	7.2	35	2	26	12.6	93	2.2	25	730
11-10	0830	1.7	6	7.0	34	2	28	10.8	87	1.7	25	240
11-23	1800	2.0	15	6.9	34	2	26	8.0	79	2.0	27	43
Avg.		1.7	9		35	2	25	10.3	87	1.8	23	360

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-4	1430	14	51	<10	0.20	0.05	0.050	82	1	81
11-9	1030	14	41	<10	0.20	0.05	0.050	60	0	60
11-10	0830	23	105	<10	0.20	0.05	0.050	111	17	94
11-23	1800	12	70	<10	0.60	0.10	0.100	67	8	59
Avg.		16	67		0.30	0.06	0.062	80	7	74

TABLE 6

ANALYTICAL RESULTS

STATION NO. 88

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	M.P.N. per 100 ml.
11-9	1120	0.01	13	7.2	135	20	36	1.0	9	31.1	2	430,000
11-10	1700	0.02	8	7.0	143	24	52	0.6	5	31.0	4	930,000
11-11	1440	0.02	12	7.0	137	23	52	0.8	7	31.0	4	1,500,000
11-17	0850	0.03	8	7.0	120	17	34	2.0	17	21.2	4	4,300,000
Avg.		0.02	10		134	21	44	1.1	10	28.6	3	1,800,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-9	1120	23	65	< 10	20.00	0.10	0.050	219	17	220
11-10	1700	42	145	< 10	10.00	0.05	0.040	239	11	228
11-11	1440	25	80	< 10	10.00	0.07	0.030	222	2	220
11-17	0850	23	70	< 10	6.00	0.09	0.010	200	6	194
Avg.		28	90		11.50	0.08	0.032	220	9	211

TABLE 6

ANALYTICAL RESULTS

STATION NO. 88-A

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
11-9	1110	0.3	3	7.0	41	5	28	11.2	83	1.7	3	360
11-10	1730	0.5	8	6.8	37	7	34	7.4	62	2.4	8	930
11-11	1430	0.6	6	6.9	28	9	24	10.8	87	2.5	10	910
11-17	0830	1.5	3	6.9	29	4	32	7.1	53	2.1	21	430
Avg.		0.7	5		34	6	30	9.1	71	2.2	10	660

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
11-9	1110	23	105	<10	1.00	0.90	0.100	713	4	709
11-10	1730	37	105	<10	0.40	1.00	0.010	94	10	84
11-11	1430	35	105	<10	0.80	0.10	.0	127	15	112
11-17	0830	30	30	<10	0.30	0.05	0.050	113	24	89
Avg.		31	99		0.62	0.51	0.040	262	13	249

TABLE 6

ANALYTICAL RESULTS

STATION NO. 101

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-2	1445	0.12	27	7.8	70	18	45	7.9	98	3.2	2.6	4,300
8-12	1225	0.32	22	7.4	72	18	45	8.5	96	2.5	6.3	9,300
8-23	1045	0.05	23	7.0	64	16	28	7.2	83	2.1	0.7	2,300
9-7	1700	No Flow										
10-8	0730	0.04	9	7.8	72	19	50	8.8	74	1.3	0.4	1,500
Avg.		0.13	20		70	18	42	8.1	88	2.3		4,400

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-2	1445	25	70							
8-12	1225	50	75							
8-23	1045	30	70							
9-7	1700	No Flow								
10-8	0730	10	66							
Avg.		29	70							

TABLE 6

ANALYTICAL RESULTS

STATION NO. 102

Collected Date 1953	Time	Discharge cfs.	Temp. °C	pH	Alk.	Cl^-	Hardness	D.O.	% D.O. Sat.	B. O. D. 5 Day 20° C	B. O. D. lbs./day at 25° C	Coliform M.P.N. per 100 ml.
8-2	1525	2.3	30	7.4	127	32	25	0.1	0.0	50	776	24,000,000
8-12	1300	1.6	24	7.4	127	34	30	0.8	0.1	42	454	24,000,000
8-23	1100	2.0	24	7.2	93	25	49	3.1	36.0	17	230	910,000
9-7	1705	1.6	29	7.0	180	36	28	0.0	0.0	84	907	15,000,000
10-8	0750	1.0	11	7.6	183	42	33	0.0	0.0	74	499	73,000,000
Avg.		2.1	24		142	34	33	0.8	7.2	53		27,000,000

Collected Date 1953	Time	Turbidity	Color	$SO_4^=$	NH_3	NO_3	NO_2^-	Solids Total	Solids Suspended	Solids Dissolved
8-2	1045	140	320							
8-12	1225	120	280							
8-23	1045	40	160							
9-7	1700	50	420							
10-8	0730	53	224							
Avg.		81	281							

EXPLANATION OF TABLE 7, RECOMMENDED CLASSIFICATIONS

The tentatively recommended classifications of the surface waters in the Roanoke River Basin are given in Table 6, pages 54 - 156. These recommendations are considered to represent the best usages of the streams in the interest of the public, and are submitted to all concerned for consideration at the Public Hearings, and the State Stream Sanitation Committee in its determination of the final classifications to be assigned.

Any stream not named in Table 6 carries the same classification as the segment of the stream to which it is tributary.

Key To Abbreviations Used In Table

Agri.	Agriculture
N	Natural
P	Polluted
WF	Woodland and Farm Land
WS	Water Supply
W	Woodland
Rec.	Recreation

Brief Explanation of Water Classifications

A-I Water supply from uninhabited watersheds requiring only approved disinfection.

A-II Water supply with approved complete treatment.

B Bathing and recreation.

C Fishing

D Agricultural, including irrigation and livestock watering and industrial cooling and process water supply.

E Navigation and the disposal of sewage, industrial wastes or other wastes.

TABLE 7

RECOMMENDED CLASSIFICATIONS

ROANOKE RIVER BASIN

	Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
I.	Dan River from N.C.-Va. State Line to Leaksville Water Supply Intake.	WF	P	W.S.	W.S.	A-II	Leaksville water supply.
	A. Archies Creek	WF	N	Agri.	Agri.	D	
	B. Elk Creek	WF	N	Agri.	Agri.	D	
	C. Little Creek	WF	N	Agri.	Agri.	D	
	D. Big Creek	WF	N	Fishing	Fishing	C	
	1. Pinch Gut Creek	WF	N	Agri.	Agri.	D	
	a. Meadow Branch	WF	N	Agri.	Agri.	D	
	E. North Double Creek	WF	N	Fishing	Fishing	C	
	F. South Double Creek	W	N	Rec.	Rec.	B	Hanging Rock State Park.
	1. Vade Mecum Creek	W	N	Rec.	Rec.	B	
	G. Cascade Creek	W	N	Rec.	Rec.	B	
	1. Indian Creek	W	N	Rec.	Rec.	B	Hanging Rock State Park.
	2. Camp Creek	W	N	Rec.	Rec.	B	
	H. Foggs Creek	WF	N	Agri.	Agri.	D	
	1. Left Prong Foggs Creek	WF	N	Agri.	Agri.	D	
	I. Steadmans Creek	WF	N	Agri.	Agri.	D	
	J. Flat Shoal Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
K. Snow Creek	WF	N	Fishing	Fishing	C	
1. Banner Branch	WF	N	Agri.	Agri.	D	
2. Mountain Branch	WF	N	Agri.	Agri.	D	
3. Little Snow Creek	WF	N	Agri.	Agri.	D	
4. Raccoon Creek	WF	N	Agri.	Agri.	D	
5. Hawkins Mill Creek	WF	N	Agri.	Agri.	D	
L. Zilphy Creek	WF	N	Agri.	Agri.	D	
M. Fulk Creek	WF	N	Agri.	Agri.	D	
N. Town Fork Creek	WF	P	Fishing	Fishing	C	Sewage from Walnut Cove.
1. Brushy Creek	WF	N	Agri.	Agri.	D	
2. Buffalo Creek	WF	N	Agri.	Agri.	D	
a. Trickum Creek	WF	N	Agri.	Agri.	D	
3. Neatman Creek	WF	N	Fishing	Fishing	C	
a. Little Neatman Creek	WF	N	Agri.	Agri.	D	
4. Martin Creek	WF	N	Agri.	Agri.	D	
5. Little Sandy Branch	WF	N	Agri.	Agri.	D	
6. Sandy Branch	WF	N	Agri.	Agri.	D	
a. West Fork Sandy Branch	WF	N	Agri.	Agri.	D	
7. Redbank Creek	WF	N	Bathing	Bathing	B	
a. Fulp Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
8. Mill Creek	WF	N	Fishing	Fishing	C	
9. Lick Creek	WF	N	Fishing	Fishing	C	
a. Right Prong Lick Creek	WF	N	Fishing	Fishing	C	
O. Eurins Creek	WF	N	Agri.	Agri.	D	
P. Belews Creek	WF	N	Fishing	Fishing	C	
1. Right Fork Belews Creek	WF	N	Agri.	Agri.	D	
2. Left Fork Belews Creek	WF	N	Agri.	Agri.	D	
3. East Belews Creek	WF	N	Fishing	Fishing	C	
4. West Belews Creek	WF	N	Fishing	Fishing	C	
Q. Reed Creek	WF	N	Agri.	Agri.	D	
R. Beaver Island Creek	WF	N	Fishing	Fishing	C	
1. West Prong Beaver Island Creek	WF	N	Fishing	Fishing	C	
S. Mayo River from N.C.-Va. Line to Water Supply Intake.	WF	N	W.S.	W.S.	A-II	Washington Mills, Madison and Mayodan water supply.
1. South Mayo River	WF	N	Fishing	Fishing	C	
a. Crooked Creek	WF	N	Fishing	Fishing	C	
(1) South Prong Crooked Creek	WF	N	Agri.	Agri.	D	
2. Buffalo Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
3. Hickory Creek	WF	N	Agri.	Agri.	D	
4. Pawpaw Creek	WF	N	Agri.	Agri.	D	
T. Mayo River from water supply intake to mouth	WF	P	Fishing	Fishing	C	Sewage & industrial waste from Mayodan, Madison, and Washington Mills.
1. Boaz Creek	WF	P	Agri.	Agri.	D	Sewage from Stoneville
2. Unnamed tributary to Mayo River	WF	P	Agri.	Agri.	D	Sewage from Stoneville
U. Hogans Creek	WF	N	Fishing	Fishing	C	
1. West Prong Hogans Creek	WF	N	Fishing	Fishing	C	
V. Jacobs Creek	WF	N	Fishing	Fishing	C	
1. West Prong Jacobs Creek	WF	N	Fishing	Fishing	C	
2. East Prong Jacobs Creek	WF	N	Fishing	Fishing	C	
W. Mossy Creek	WF	N	Agri.	Agri.	D	
X. Rockhouse Creek	WF	N	Fishing	Fishing	C	
Y. Roach Creek	WF	N	Agri.	Agri.	D	
Z. Whetstone Creek	WF	N	Agri.	Agri.	D	
AA. Buffalo Creek	WF	P	Fishing	Fishing	C	Sewage from Stoneville
1. Unnamed tributary	WF	N	Agri.	Agri.	D	
2. Unnamed tributary	WF	P	Agri.	Agri.	D	Sewage from Stoneville
3. Unnamed tributary	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

	Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
II.	Dan River - that portion in N. C. from Leaksville water supply intake.	WF	P	Fishing	Fishing	C	Sewage and industrial waste from Leaksville, Spray, Draper, and Fieldcrest Mills.
	A. Matrimony Creek	WF	N	Agri.	Agri.	D	
	1. Little Matrimony Creek	WF	N	Agri.	Agri.	D	
	2. Poplar Branch	WF	N	Agri.	Agri.	D	
	B. Smith River above water supply intake.	WF	N	W.S.	W.S.	A-II	Fieldcrest Mills water supply; supplying Spray and Draper.
	C. Smith River from water supply intake to mouth	WF	P	Fishing	Fishing	C	
	I. Town Creek	WF	N	Agri.	Agri.	D	
	E. Cascade Creek	WF	N	Agri.	Agri.	D	
	1. Dry Creek	WF	N	Agri.	Agri.	D	
	F. Whitecoak Creek	WF	N	Agri.	Agri.	D	
	G. Williamson Creek	WF	N	Agri.	Agri.	D	
	H. Wolf Island Creek	WF	P	Fishing	Fishing	C	Sewage from Reidsville
	1. Quagna Creek	WF	N	Agri.	Agri.	D	
	2. Lovelace Creek	WF	N	Agri.	Agri.	D	
	3. Birch Fork Creek	WF	N	Agri.	Agri.	D	
	I. Hogans Creek	WF	P	Fishing	Fishing	C	Sewage from Reidsville
	1. Jones Creek	WF	P	Agri.	Agri.	D	Sewage from Reidsville
	2. Lick Fork Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
J. Moon Creek	WF	N	Agri.	Agri.	D	
1. East Prong Moon Creek	WF	N	Agri.	Agri.	D	
2. Fullers Creek	WF	N	W.S.	W.S.	A-II	Yanceville Water Supply
K. Rattlesnake Creek	WF	N	Agri.	Agri.	D	
1. North Fork Rattlesnake Creek	WF	N	Agri.	Agri.	D	
2. South Fork Rattlesnake Creek	WF	N	Agri.	Agri.	D	
L. Country Line Creek	WF	P	Fishing	Fishing	C	Sewage from Yanceyville
1. Hostler Branch	WF	N	Agri.	Agri.	D	
2. South Country Line Creek	WF	N	Fishing	Fishing	C	
a. Pensen Creek	WF	N	Fishing	Fishing	C	
M. Hyco River	WF	N	Fishing	Fishing	C	
1. Hyco Creek	WF	N	Fishing	Fishing	C	
a. Lynch Creek	WF	N	Fishing	Fishing	C	
b. Panther Branch	WF	N	Agri.	Agri.	D	
c. Cobbs Creek	WF	N	Agri.	Agri.	D	
2. Reedy Fork Creek	WF	N	Agri.	Agri.	D	
3. Cobbs Creek	WF	N	Agri.	Agri.	D	
4. South Hyco Creek	WF	N	Fishing	Fishing	C	
a. Sugar Tree Creek	WF	N	Agri.	Agri.	D	
b. Mill Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
(1) Snipe Creek	WF	N	Agri.	Agri.	D	
(2) Double Creek	WF	N	Agri.	Agri.	D	
c. Richland Creek	WF	N	Agri.	Agri.	D	
d. Duck Creek	WF	N	Agri.	Agri.	D	
5. Cane Creek	WF	N	Agri.	Agri.	D	
6. Ghents Creek	WF	N	Agri.	Agri.	D	
7. Storys Creek above Chub Lake	WF	N	W.S.	W.S.	A-II	Roxboro water supply
a. Satterfield Creek	WF	N	W.S.	W.S.	A-II	
8. Storys Creek below Chub Lake	WF	N	Agri.	Agri.	D	
a. Marlowe Creek	WF	P	Agri.	Agri.	D	Sewage and industrial waste from Roxboro
(1) Mitchell Creek	WF	N	Agri.	Agri.	D	
(2) Fishing Branch	WF	N	Agri.	Agri.	D	
9. Castle Creek	WF	N	Agri.	Agri.	D	
10. Manho Creek	WF	N	Fishing	Fishing	C	
a. Donaldson Creek	WF	N	Agri.	Agri.	D	
b. Mill Creek	WF	N	Fishing	Fishing	C	
c. Spoonwater Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
11. Blue Wing Creek	WF	N	Fishing	Fishing	C	
N. Aarons Creek	WF	N	Fishing	Fishing	C	
III. Roanoke River - tributaries to the Roanoke River from the Mouth of the Dan River to the N.C.-Va. State Line.						
A. Grass Creek	WF	N	Fishing	Fishing	C	
1. Bearskin Creek	WF	N	Agri.	Agri.	D	
2. Mountain Creek	WF	N	Agri.	Agri.	D	
3. Little Grass Creek	WF	N	Fishing	Fishing	C	
a. Blue Creek	WF	N	Agri.	Agri.	D	
b. Graham Creek	WF	N	Agri.	Agri.	D	
4. Beech Creek	WF	N	Fishing	Fishing	C	
a. Johnsons Creek	WF	N	Agri.	Agri.	D	
5. Spewmarrow Creek	WF	N	Agri.	Agri.	D	
B. Backwater Kerr Reservoir	W	N	Fishing	Fishing	C	
C. Island Creek	WF	N	Fishing	Fishing	C	
1. Hawlett Creek	WF	N	Fishing	Fishing	C	
D. Little Island Creek	WF	N	Fishing	Fishing	C	
E. Nutbush Creek	WF	P	Fishing	Fishing	C	Sewage from Henderson
1. Indian Creek	WF	N	Fishing	Fishing	C	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
2. Crooked Run	WF	N	Fishing	Fishing	C	
3. Flat Creek	WF	N	Fishing	Fishing	C	
4. Anderson Swamp Creek	WF	N	Fishing	Fishing	C	
a. Mill Creek	WF	N	Fishing	Fishing	C	
F. Smith Creek	WF	N	Agri.	Agri.	D	
1. Little Deep Creek	WF	N	Agri.	Agri.	D	
2. Blue Mud Creek	WF	N	Agri.	Agri.	D	
a. Malones Creek	WF	N	Agri.	Agri.	D	
(1) West Branch	WF	N	Agri.	Agri.	D	
b. Tarrapin Creek	WF	N	Agri.	Agri.	D	
G. Hawtree Creek	WF	N	Agri.	Agri.	D	
1. Mill Creek	WF	N	Agri.	Agri.	D	
2. Sauls Creek	WF	N	Agri.	Agri.	D	
IV. Roanoke River from Va.-N.C. State Line to Roanoke Rapids Dam.	WF	P	W.S.	W.S.	A-II	Roanoke Rapids sanitary district and Weldon water supply
A. Sixpound Creek	WF	N	Agri.	Agri.	D	
1. Jordan Creek	WF	N	Agri.	Agri.	D	
B. Hubquarter Creek	WF	N	Agri.	Agri.	D	
1. Little Hubquarter Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
C. Walker Creek	WF	N	Agri.	Agri.	D	
D. Big Stonehouse Creek	WF	N	Fishing	Fishing	C	
1. Little Stonehouse Creek	WF	P	Agri.	Agri.	D	Sewage from Littleton
a. West Littleton Branch	WF	P	Agri.	Agri.	D	
b. Bagley Academy Branch	WF	P	Agri.	Agri.	D	
E. Lizard Creek	WF	N	Agri.	Agri.	D	
F. Pea Hill Creek	WF	N	Agri.	Agri.	D	
1. Dogwood Branch	WF	N	Agri.	Agri.	D	
G. Jimmies Run	WF	N	Agri.	Agri.	D	
H. Black Gut	WF	N	Agri.	Agri.	D	
1. Double Branch	WF	N	Agri.	Agri.	D	
I. Deep Creek	WF	N	Agri.	Agri.	D	
V. Roanoke River from Roanoke Rapids Dam to Mouth.	WF	P	Fishing	Fishing	C	
A. Deep Creek	WF	N	Agri.	Agri.	D	
B. Lees Creek	WF	N	Agri.	Agri.	D	
C. Arthurs Creek	WF	N	Agri.	Agri.	D	
D. Chockoyotte Creek	WF	N	Fishing	Fishing	C	
E. Quankey Creek	WF	P	Agri.	Agri.	D	Sewage from Halifax
1. Little Quankey Creek	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
F. Occoneechee Creek	WF	N	Agri.	Agri.	D	
G. Wheeler Creek	WF	N	Agri.	Agri.	D	
1. Gumberry Swamp	WF	N	Agri.	Agri.	D	
2. Lilly Pond Creek	W	P	Agri.	Agri.	D	Sewage from Jackson
H. Conoconnara Swamp	WF	N	Agri.	Agri.	D	
I. Bridgers Creek	WF	P	Agri.	Agri.	D	Sewage from Rich Square
J. Sandy Run	WF	N	Agri.	Agri.	D	
K. Quinine Swamp	WF	N	Agri.	Agri.	D	
L. Brittons Swamp	WF	N	Agri.	Agri.	D	
M. Flag Run	WF	N	Agri.	Agri.	D	
N. Thompsons Gut	WF	N	Agri.	Agri.	D	
O. Kehukee Swamp	WF	N	Agri.	Agri.	D	
1. Webb Mill Branch	WF	N	Agri.	Agri.	D	
P. Canal Gut	WF	N	Agri.	Agri.	D	
Q. Indian Creek	WF	N	Agri.	Agri.	D	
R. Coniott Creek	WF	N	Agri.	Agri.	D	
1. Frog Level Swamp	WF	N	Agri.	Agri.	D	
S. Conoho Creek	WF	N	Fishing	Fishing	C	
1. Ethridge Swamp	WF	N	Agri.	Agri.	D	

TABLE 7

RECOMMENDED CLASSIFICATIONS

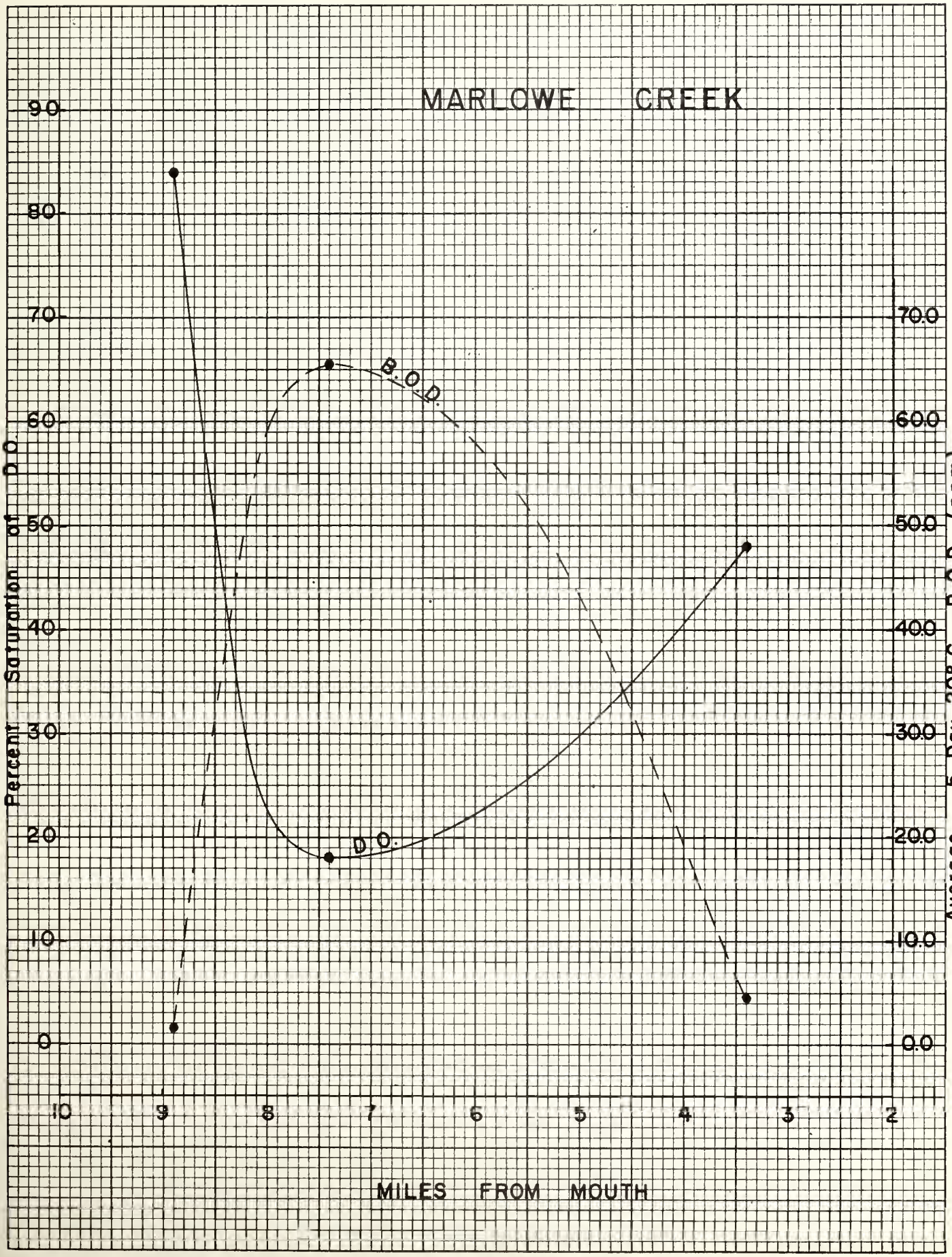
Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
2. Beaverdam Creek	WF	N	Fishing	Fishing	C	
3. Mill Branch	WF	N	Agri.	Agri.	D	
T. Sweetwater Creek	WF	N	Fishing	Fishing	C	
1. Hardison Mill Creek	WF	N	Fishing	Fishing	C	
a. Long Creek	WF	N	Fishing	Fishing	C	
2. Smithwick Creek	WF	N	Fishing	Fishing	C	
3. Ready Branch	WF	N	Agri.	Agri.	D	
4. Dog Branch	WF	N	Agri.	Agri.	D	
U. Connie Creek	W	P	Fishing	Fishing	C	
V. Gardners Creek	WF	N	Fishing	Fishing	C	
1. Deep Run Swamp	W	N	Agri.	Agri.	D	
2. Lanier Swamp	W	N	Agri.	Agri.	D	
3. Cooper Swamp	WF	N	Agri.	Agri.	D	
W. Broad Creek	W	N	Fishing	Fishing	C	
X. Cashie River	WF	P	Fishing	Fishing	C	Sewage from Windsor
1. Wahtom Swamp	W	N	Agri.	Agri.	D	
2. Connaritsa Swamp	W	N	Agri.	Agri.	D	
3. Whiteoak Swamp	W	N	Agri.	Agri.	D	
4. Chiska Creek	WF	N	Agri.	Agri.	D	
5. Hoggard Mill Creek	WF	N	Fishing	Fishing	C	

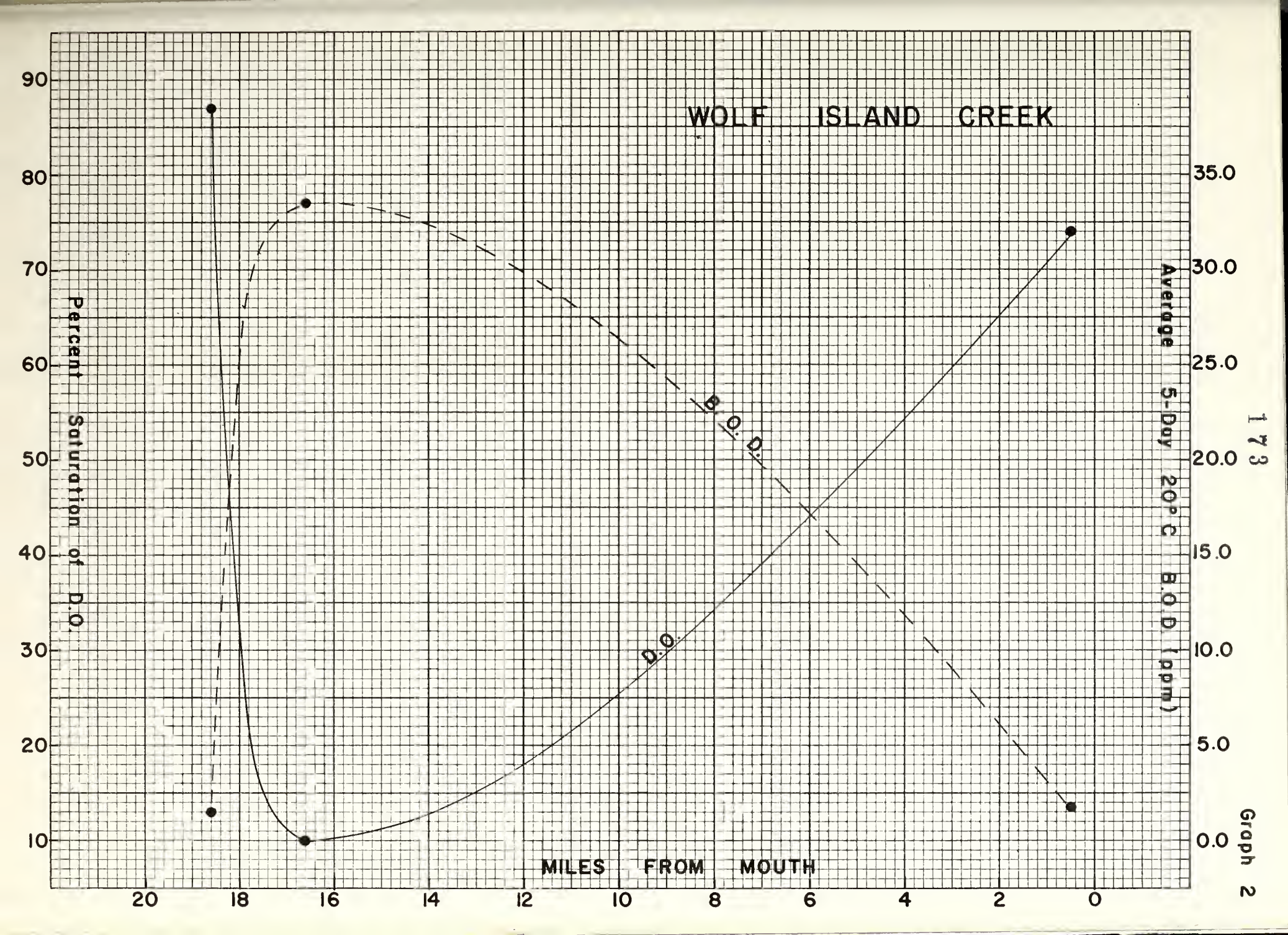
TABLE 7

RECOMMENDED CLASSIFICATIONS

Stream	Character of District	Condition of Waters	Chief Present Usage	Best Usage	Proposed Class	Comments
a. Flat Swamp	WF	N	Agri.	Agri.	D	
b. Chucklemaker Swamp	WF	N	Agri.	Agri.	D	
6. Wading Place Creek	WF	N	Fishing	Fishing	C	
7. Roquist Creek	WF	N	Fishing	Fishing	C	
a. Choowatic Creek	WF	N	Agri.	Agri.	C	
b. Mill Swamp	W	N	Agri.	Agri.	D	
Y. Welch Creek to ACL RR Bridge	WF	N	Agri.	Agri.	D	
Z. Welch Creek from ACL RR Bridge to Mouth	W	P	Waste Disposal	Waste Disposal	E	Waste from N. C. Pulp Co.
AA. Conaby Creek	WF	P	Fishing	Fishing	C	
BB. Cashote Creek	WF	N	Fishing	Fishing	C	

Graph I

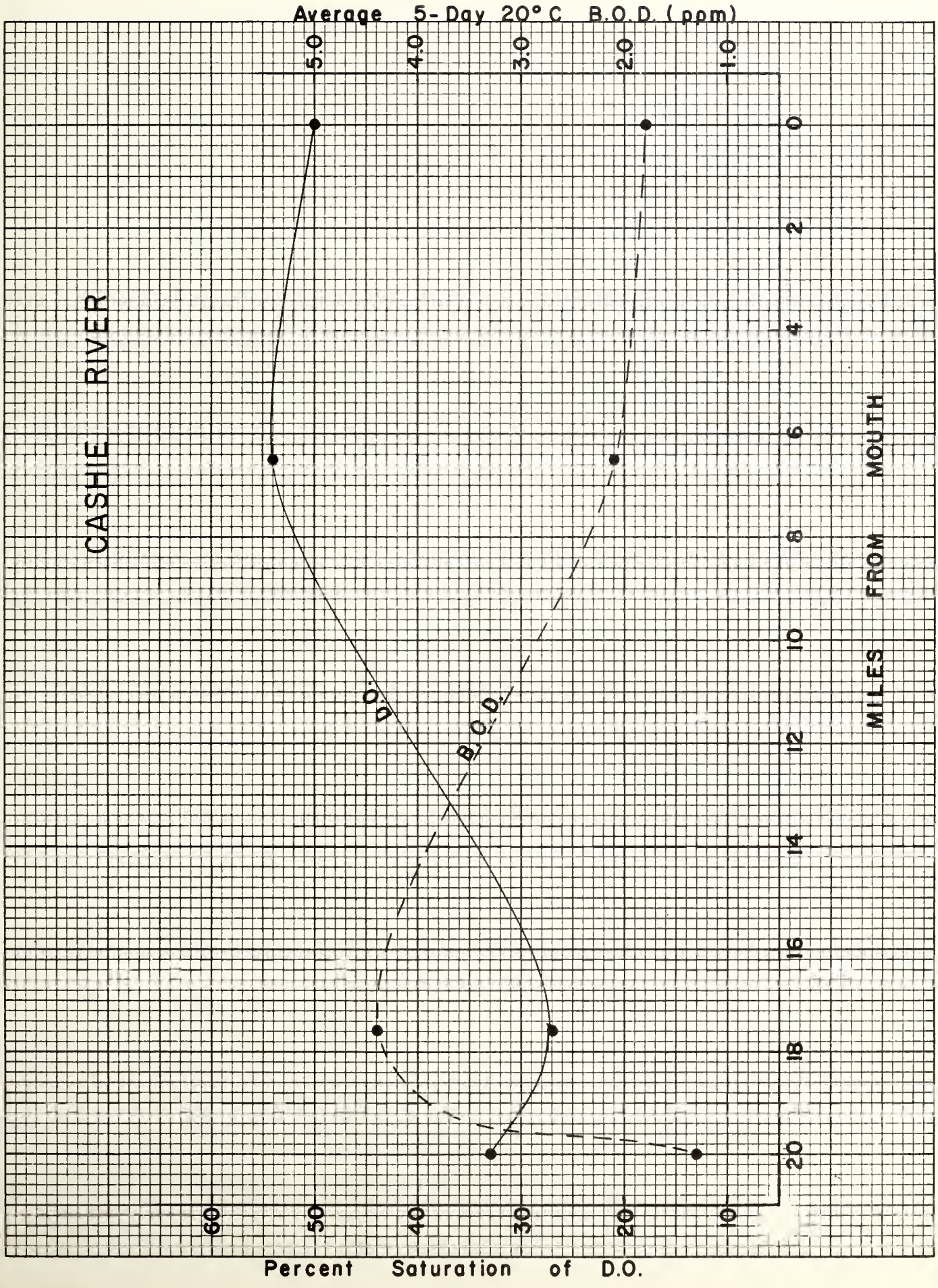

MARLOWE CREEK
Percent Saturation of D.O.
Average 5-Day 20° C B.O.D. (ppm)
90
80
70
60
50
40
30
20
10
0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
B.O.D.
D.O.
10
9
8
7
6
5
4
3
2
MILES FROM MOUTH


WOLF ISLAND CREEK
Percent Saturation of D.O.
Average 5-Day 20° C B.O.D. (ppm)
MILES FROM MOUTH
B.O.D.
D.O.
90
80
70
60
50
40
30
20
10
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
20
18
16
14
12
10
8
6
4
2
0

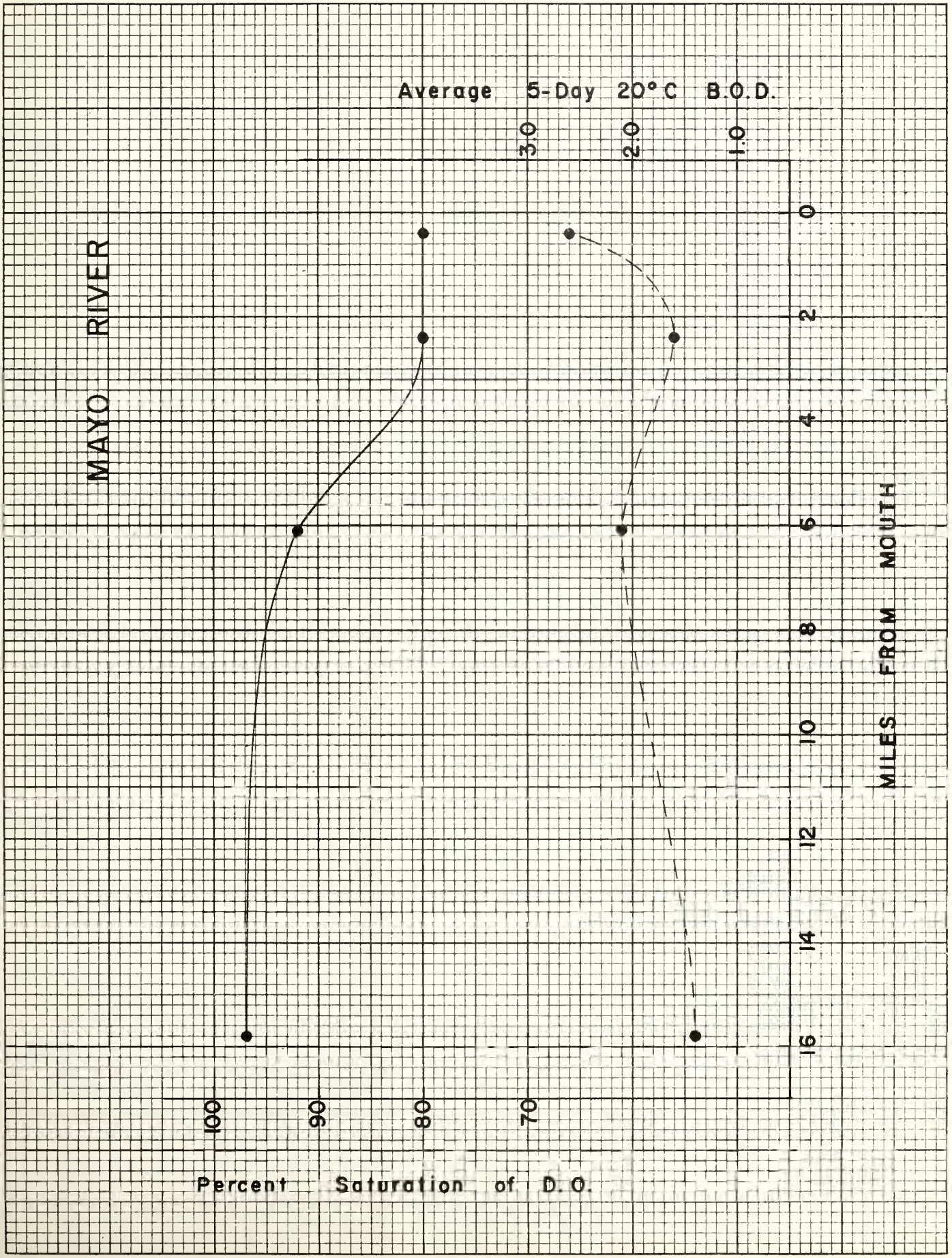
173

Graph 2

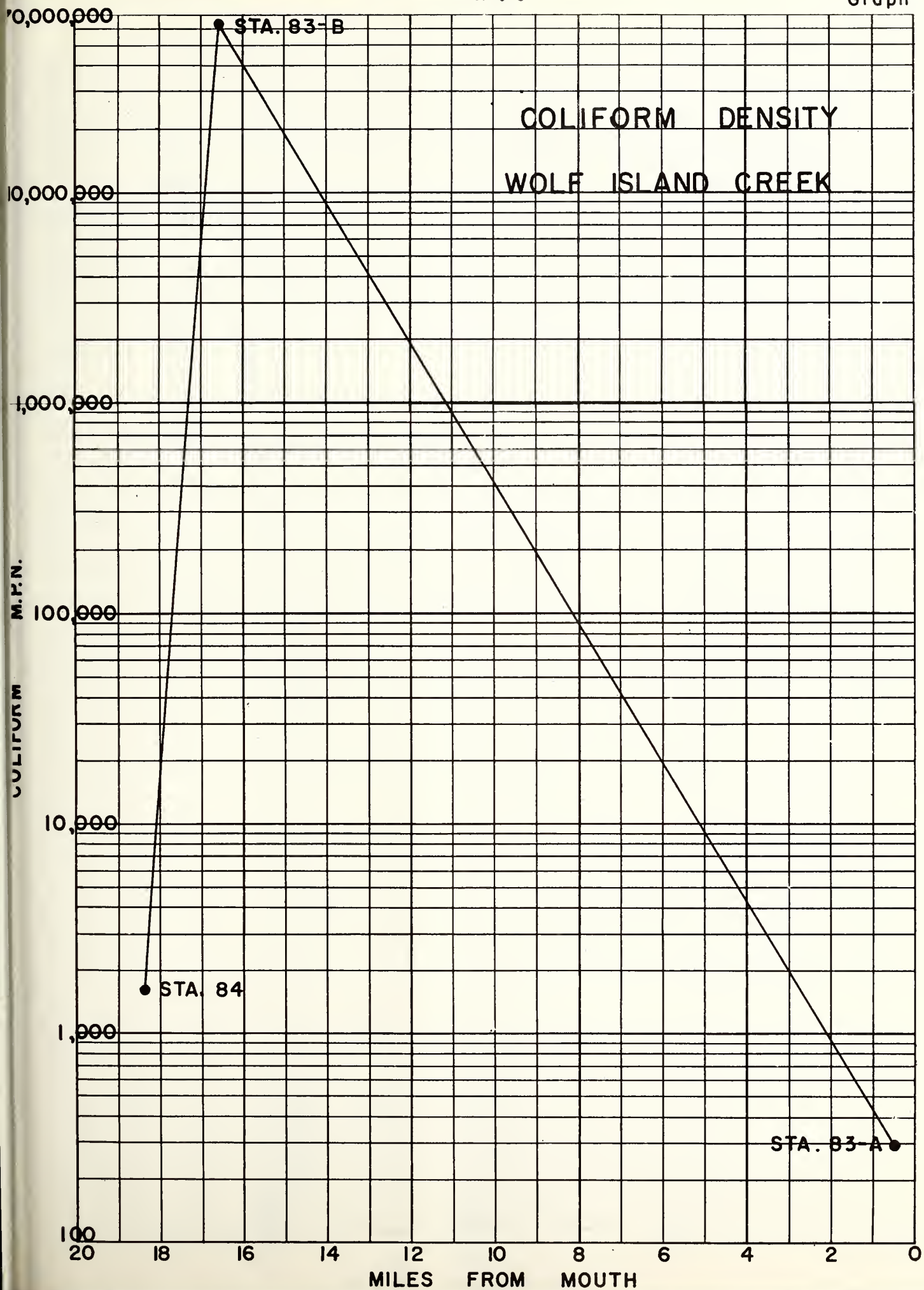
Graph 3


Average 5-Day 20° C B.O.D. (ppm)
5.0
4.0
3.0
2.0
1.0
0
2
4
6
8
10
12
14
16
18
20
CASHIE RIVER
MILES FROM MOUTH
D.O.
B.O.D.
60
50
40
30
20
10
Percent Saturation of D.O.

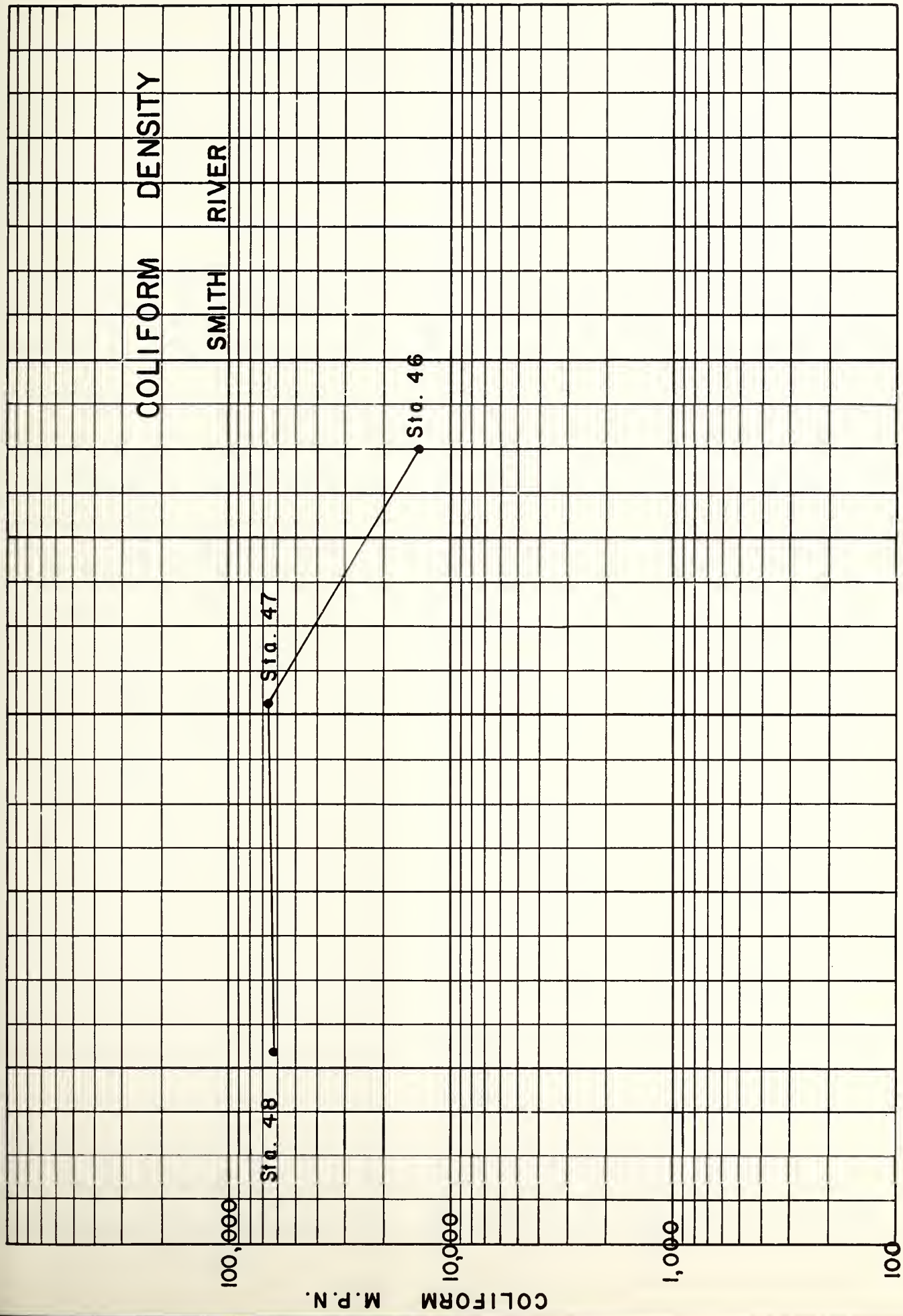
Graph 4

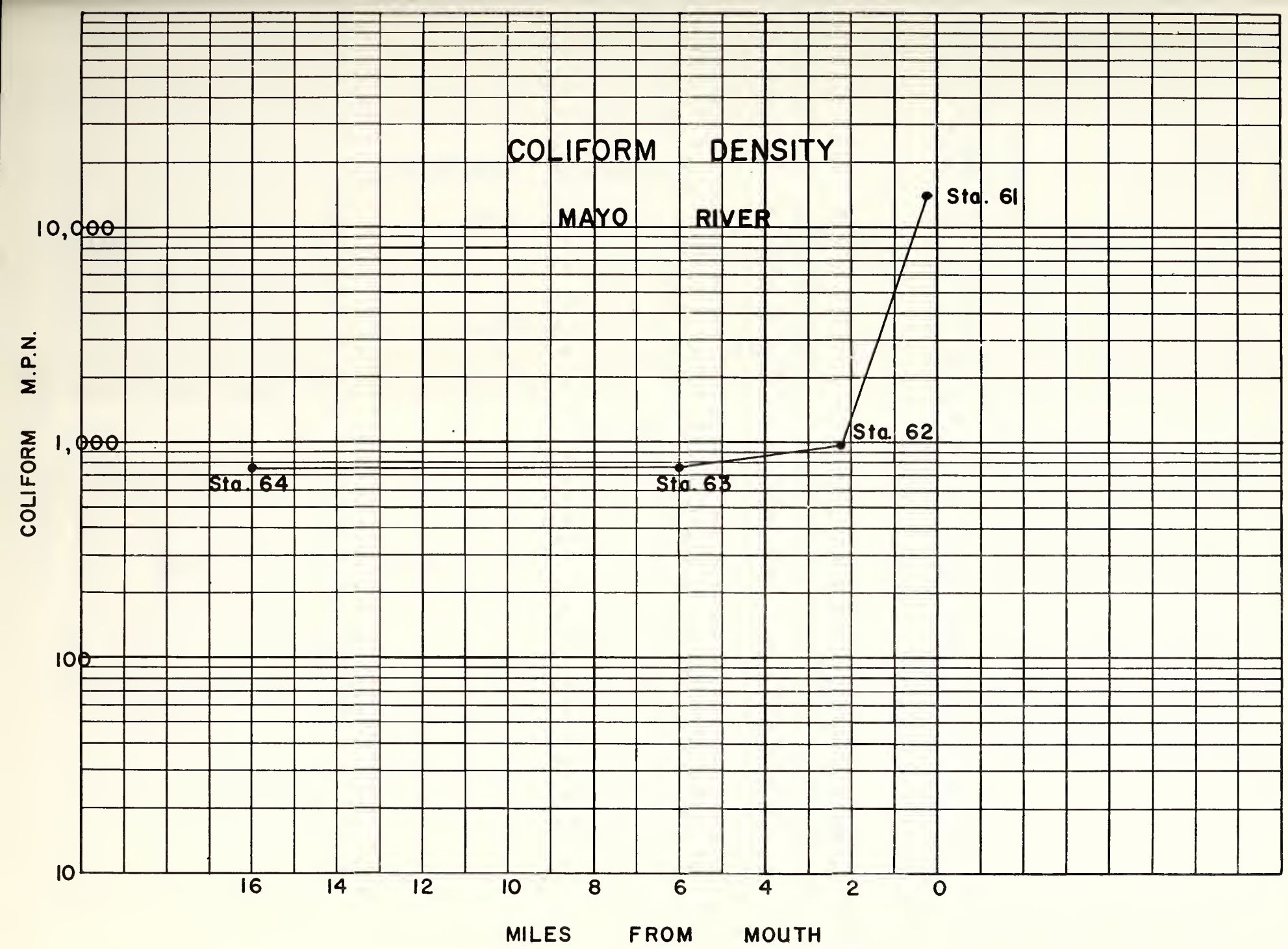

MAYO RIVER
Average 5-Day 20° C B.O.D.
3.0
2.0
1.0
0
2
4
6
8
10
12
14
16
MILES FROM MOUTH
100
90
80
70
Percent Saturation of D.O.

Graph 5

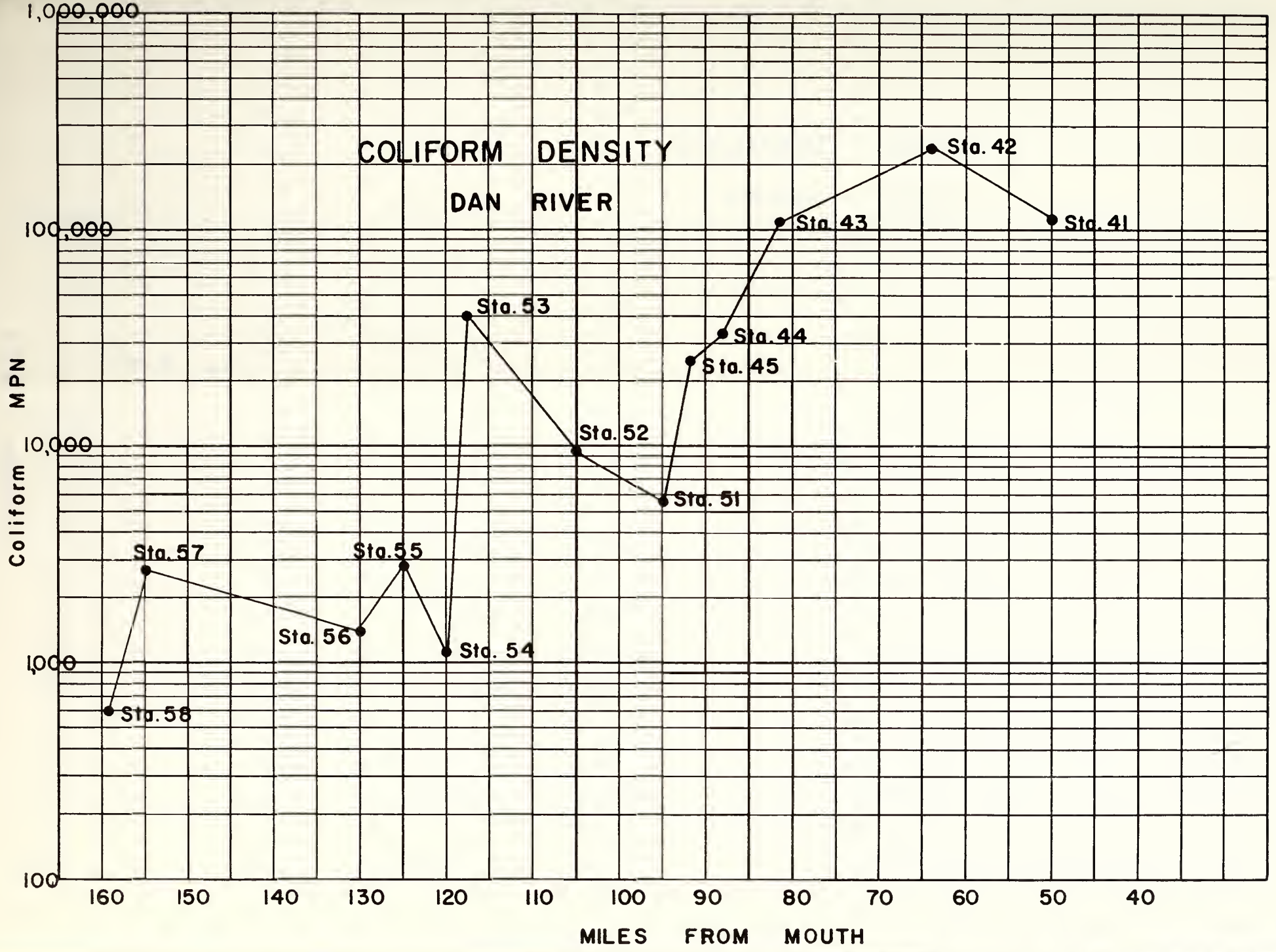

70,000,000
10,000,000
1,000,000
100,000
10,000
1,000
100
COLIFORM M.P.N.
STA. 83-B
STA. 84
STA. 83-A
COLIFORM DENSITY
WOLF ISLAND CREEK
20
18
16
14
12
10
8
6
4
2
0
MILES FROM MOUTH

Graph 6


COLIFORM DENSITY
SMITH RIVER
Sta. 46
Sta. 47
Sta. 48
100,000
10,000
1,000
100
COLIFORM M.P.N.
1
2
3
4
5
6
7
8
9
MILES FROM MOUTH

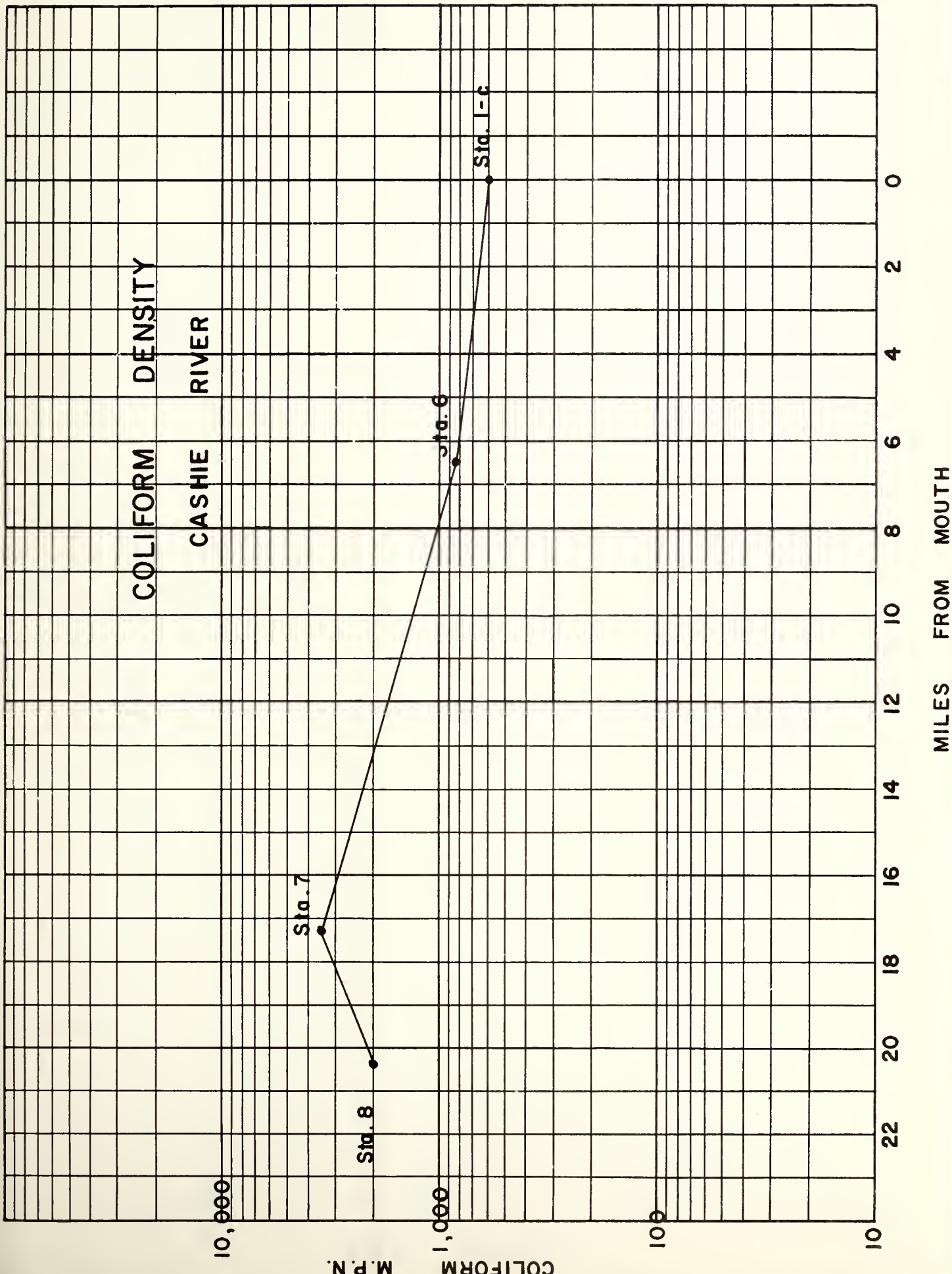

COLIFORM DENSITY
MAYO RIVER
Sta. 61
Sta. 62
Sta. 63
Sta. 64
10,000
1,000
100
10
COLIFORM M.P.N.
16
14
12
10
8
6
4
2
0
MILES FROM MOUTH

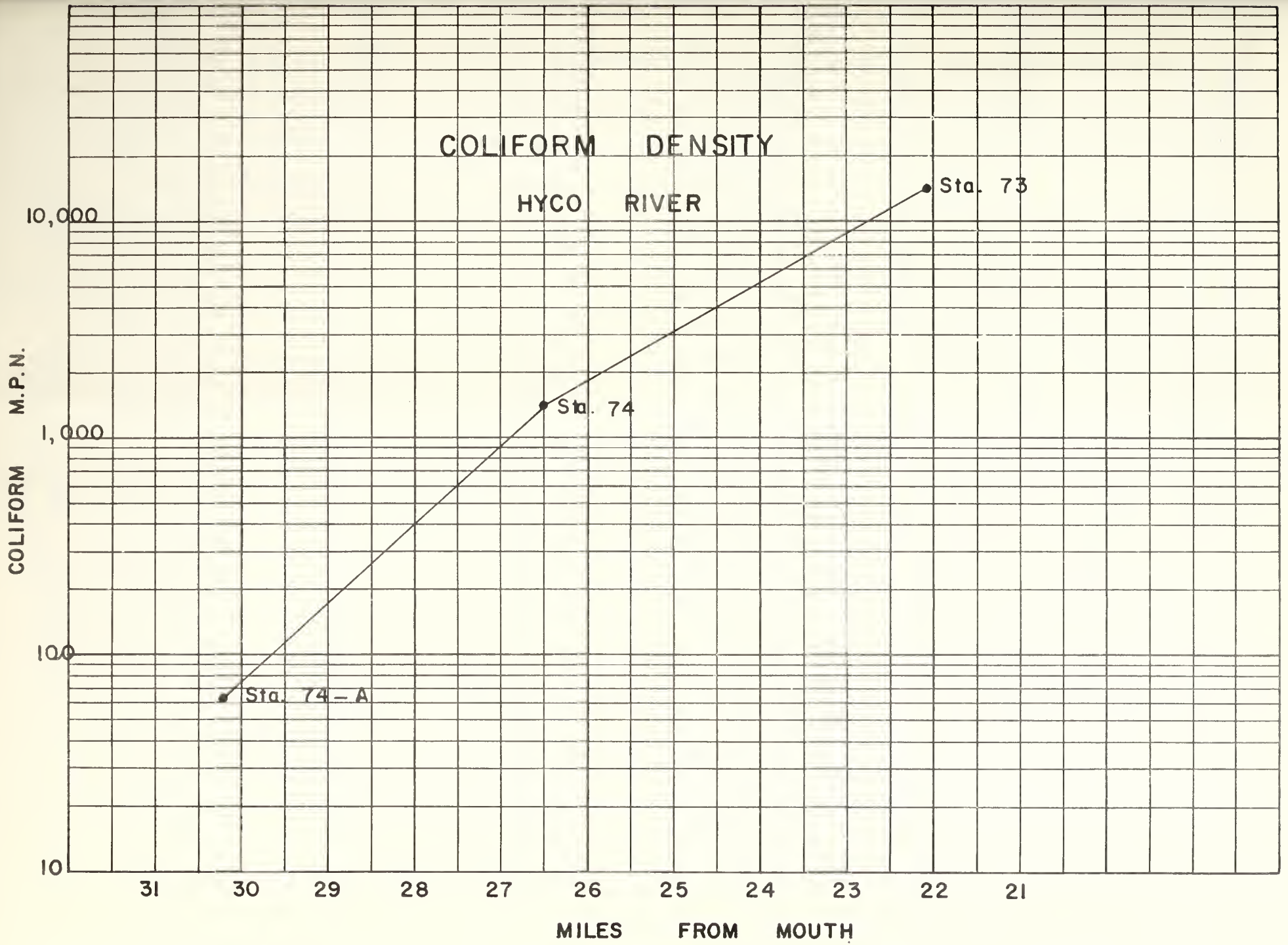
Graph 7


COLIFORM DENSITY
DAN RIVER
Coliform MPN
1,000,000
100,000
10,000
1,000
100
Sta. 42
Sta. 43
Sta. 41
Sta. 53
Sta. 44
Sta. 45
Sta. 52
Sta. 51
Sta. 57
Sta. 55
Sta. 56
Sta. 54
Sta. 58
160
150
140
130
120
110
100
90
80
70
60
50
40
MILES FROM MOUTH

Graph 8

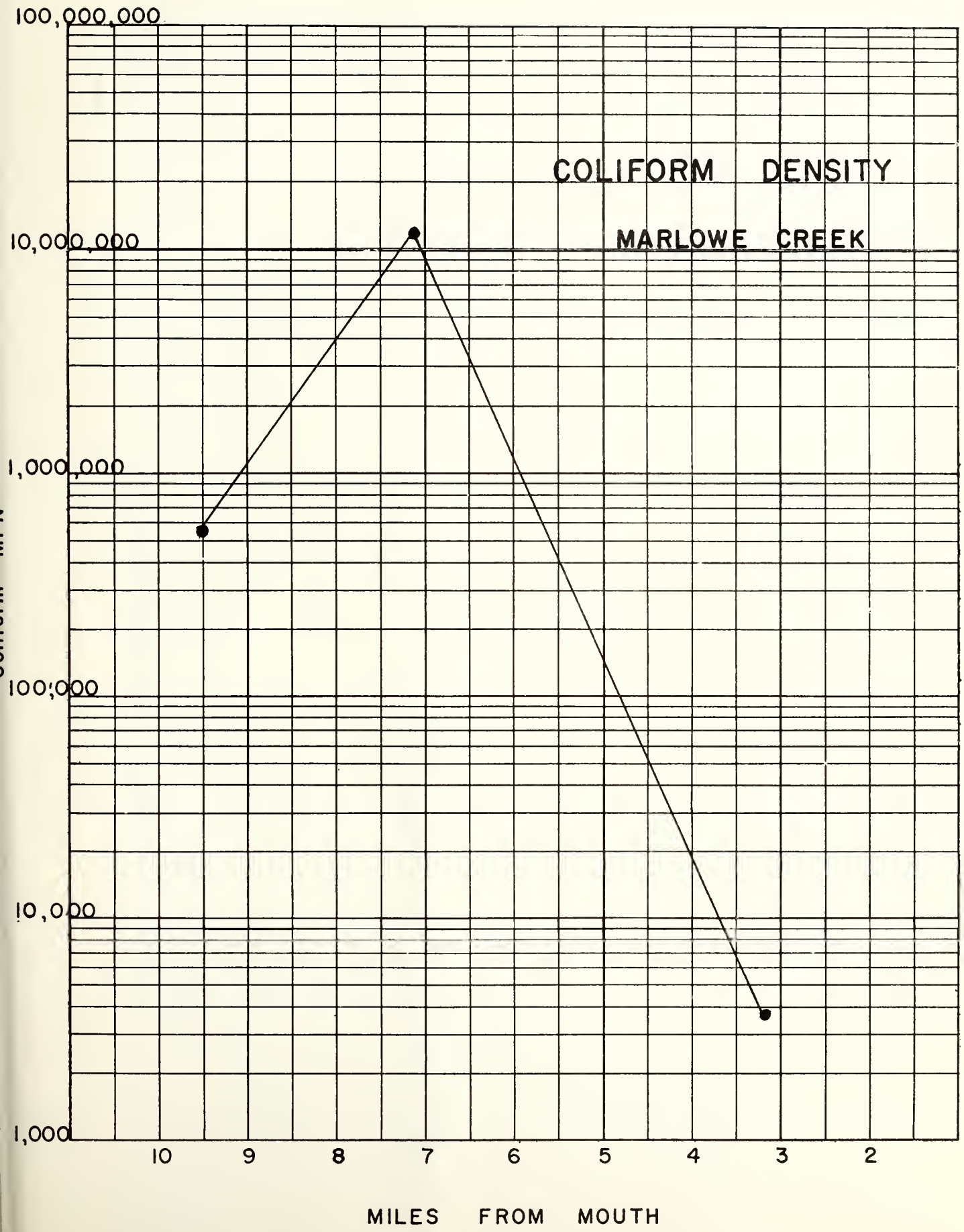
Graph 9


COLIFORM DENSITY
CASHIE RIVER
Sta. 1-C
Sta. 6
Sta. 7
Sta. 8
10,000
1,000
100
10
COLIFORM M.P.N.
0
2
4
6
8
10
12
14
16
18
20
22
MILES FROM MOUTH

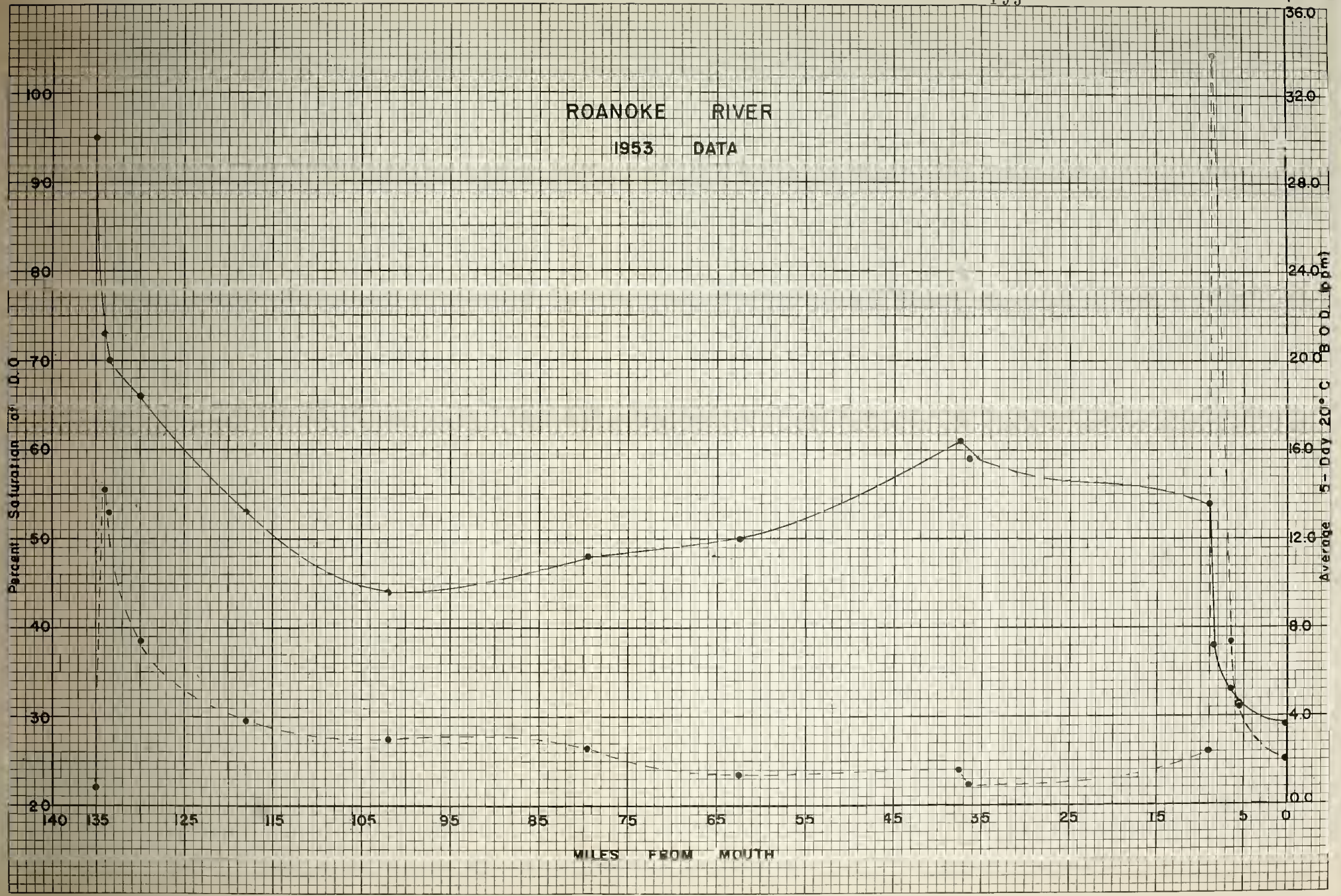

COLIFORM DENSITY
HYCO RIVER
Sta. 73
Sta. 74
Sta. 74 – A
10,000
1,000
100
10
COLIFORM M.P.N.
31
30
29
28
27
26
25
24
23
22
21
MILES FROM MOUTH

Graph 10

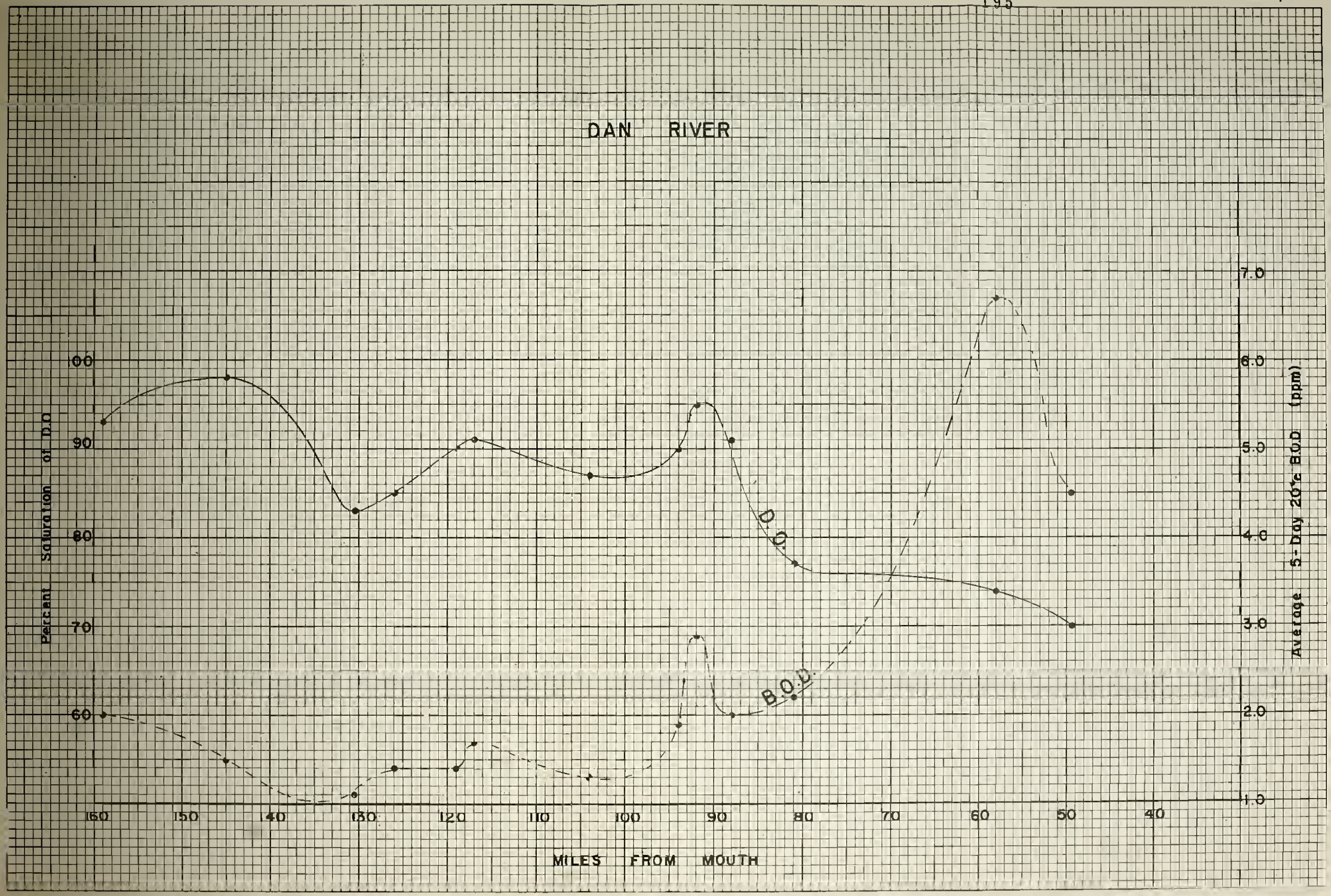
Graph II

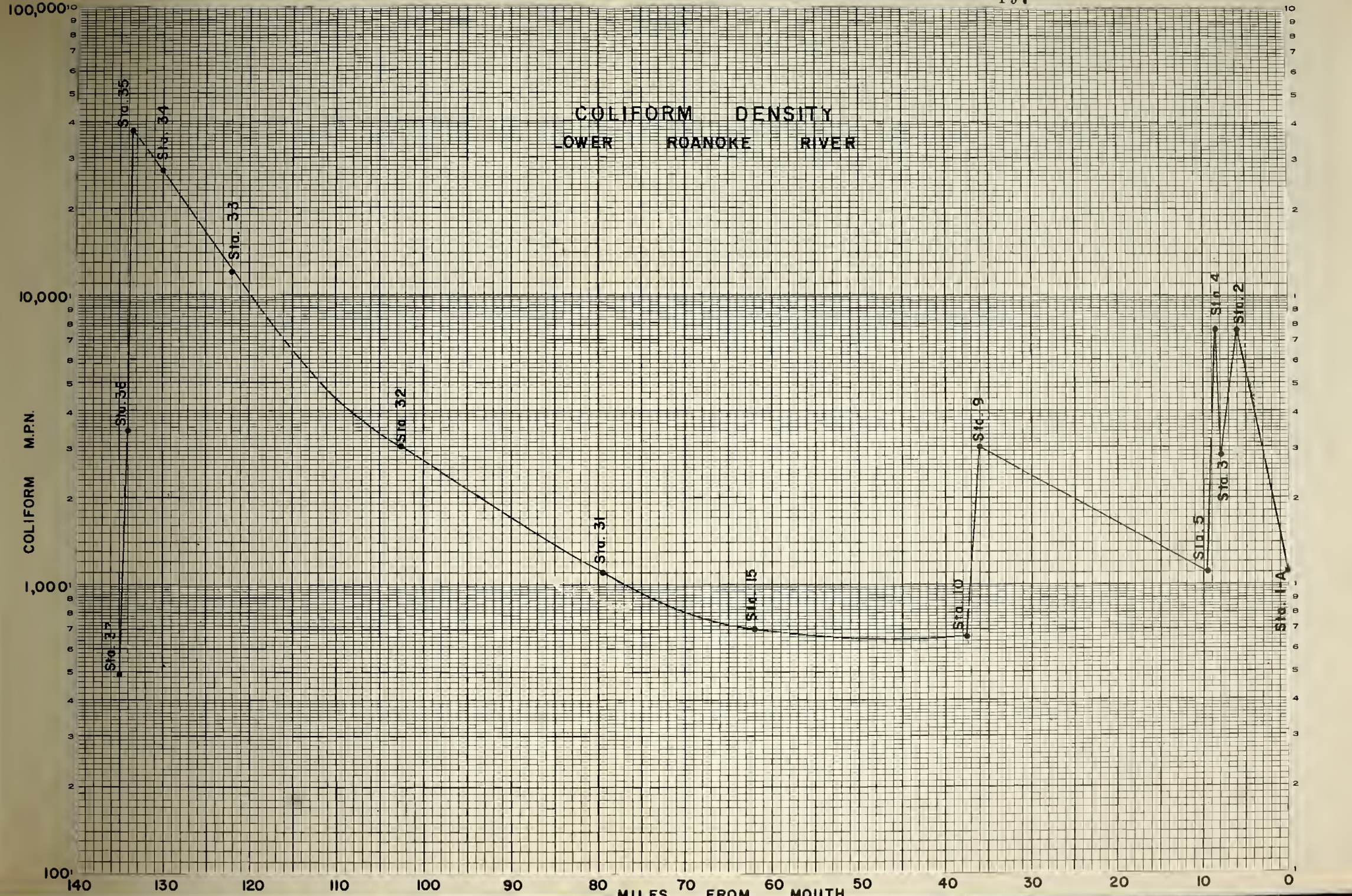

COLIFORM DENSITY
MARLOWE CREEK
100,000,000
10,000,000
1,000,000
100,000
10,000
1,000
10
9
8
7
6
5
4
3
2
MILES FROM MOUTH

Graph 12

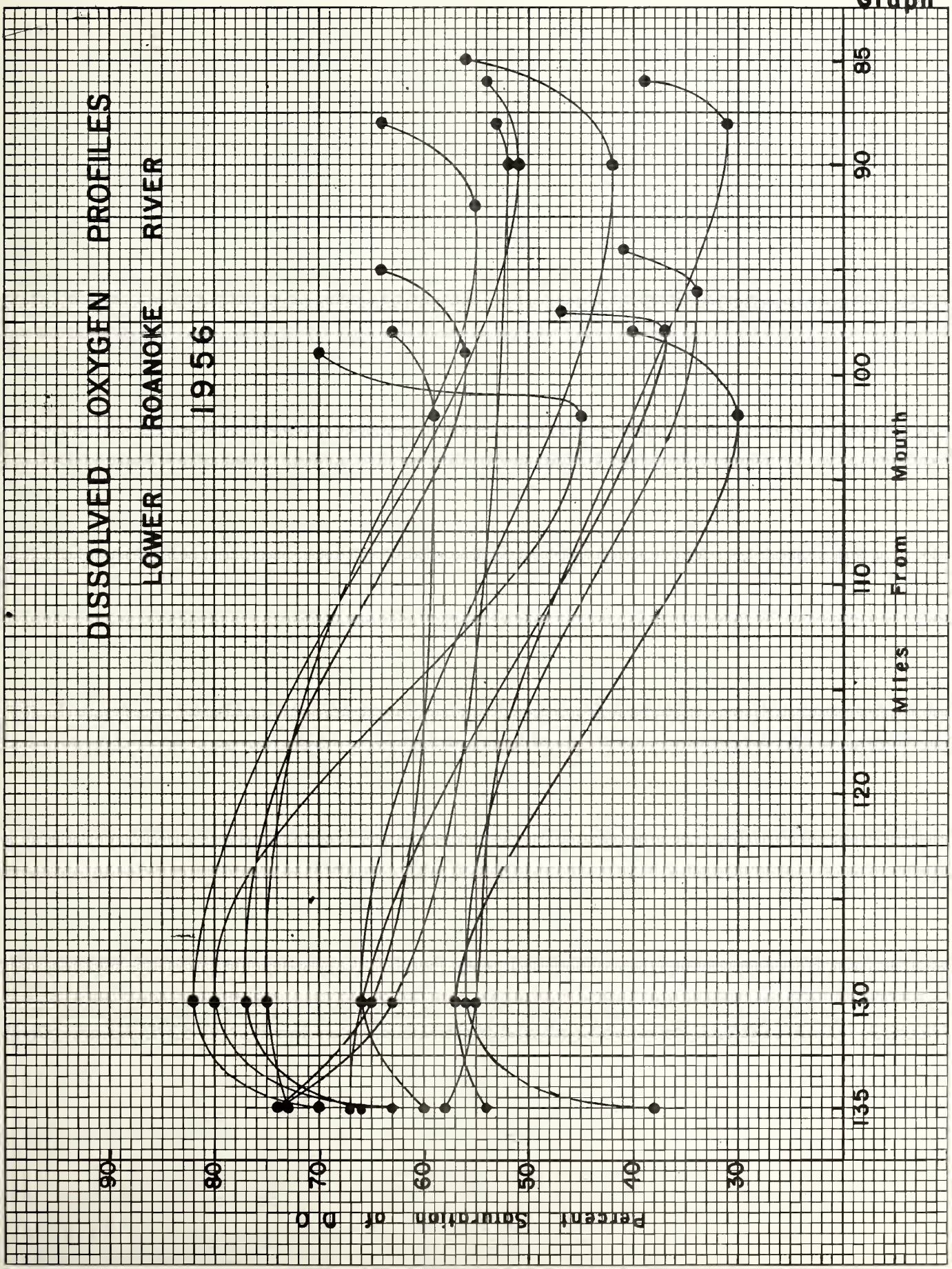

ROANOKE RIVER
1953 DATA
Percent Saturation of D.O.
Average 5- Day 20° C B O D. (ppm)
MILES FROM MOUTH
100
90
80
70
60
50
40
30
20
36.0
32.0
28.0
24.0
20.0
16.0
12.0
8.0
4.0
0.0
140
135
125
115
105
95
85
75
65
55
45
35
25
15
5
0

Graph 13


DAN RIVER
Percent Saturation of D.O
Average 5-Day 20°c B.O.D (ppm)
D.O.
B.O.D.
100
90
80
70
60
7.0
6.0
5.0
4.0
3.0
2.0
1.0
160
150
140
130
120
110
100
90
80
70
60
50
40
MILES FROM MOUTH


COLIFORM DENSITY
LOWER ROANOKE RIVER
COLIFORM M.P.N.
100,000
10,000
1,000
100
MILES FROM MOUTH
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Sta. 35
Sta. 34
Sta. 33
Sta. 32
Sta. 31
Sta. 15
Sta. 10
Sta. 9
Sta. 5
Sta. 4
Sta. 3
Sta. 2
Sta. 1-A
Sta. 36
Sta. 37

Graph 15


DISSOLVED OXYGEN PROFILES
LOWER ROANOKE RIVER
1956
Percent Saturation of D O
90
80
70
60
50
40
30
85
90
100
110
120
130
135
Miles From Mouth